THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

No XVI.—October, 1844. 25

PUBLISHERS' NOTICE.

In presenting the concluding number for the year of The American Journal of the Medical Sciences, the Publishers must offer their thanks to the profession for the increased favour extended to this long-established periodical, now the oldest Medical Journal in the Union. As an evidence of this patronage it may be stated, that notwithstanding an enlarged edition was printed for this year, at the present time not a single copy of the January number can be supplied.

It is intended to continue the work as heretofore, with about 264 large pages, quarterly, with such cuts and plates as are essential to illustrate the different papers; and *particular attention* is invited to that portion embracing

THE RETROSPECT FOR THE QUARTER,

Presenting, as it does, the most copious Summary of the Improvements and Discoveries in Medicine and Surgery, from all the various Journals published abroad and at home.

With a view of extending the circulation of the Journal, the publishers are now furnishing, with it—

A MONTHLY PERIODICAL, FREE OF CHARGE,

To such subscribers as remit Five Dollars in advance.

Attention is solicited to the following terms:—

Those persons who remit Five Dollars by the last of January next will receive not only The Medical Journal for 1845, but the Medical News and Library for 1845 free of any charge.

For Ten Dollars they will furnish the Journal for 1845 and 1846, and the News for 1844, 1845 and 1846 free of any further charge.

Subscribers who have not yet paid for the year 1844, are particularly requested to remit for the present year Five Dollars now that the last number is sent. Such subscribers are informed that if Ten Dollars are remitted by the first of January next, it will be placed to their credit for the Journal for 1844 and 1845, and the News for the same years sent free of charge.

No such terms can be made except to subscribers who remit *in advance, free of postage, and direct to the Publishers.*

Agents can furnish the News *gratis* to be sent by mail, only in cases where the subscription, Five Dollars, for the Journal, is *paid in advance;* under no other circumstances will they send The News gratis.

Early orders are solicited, as very few more copies of the Journal will be printed than are actually subscribed for, and subscribers may be disappointed in obtaining the early Numbers of the year, as was the case the present year.

The *Medical News and Library* for 1845 will contain, in addition to the News of the month,

THE SURGICAL LECTURES OF SIR BENJAMIN BRODIE;

Thus following Watson's Practice of Physic, (which occupied the Library portion of the News for 1843 and 1844,) with a work on Surgery of great practical value, and by one of the first and most authoritative surgeons of the day. The pages of the Lectures will be so arranged that, when complete, they can be bound in a volume.

The News and Library will be issued monthly, and contain 32 pages, and go by mail as a newspaper. Price One Dollar a year, payable in advance, and in current funds, free of postage.

Postmasters are at liberty to frank remittances in payment for subscriptions.

Philadelphia, Oct. 1st, 1844.

TO READERS AND CORRESPONDENTS.

We invite attention to our publishers' notice, acknowledging the increased favour extended to this journal during the past year, and promising renewed efforts on their part to render it worthy of further patronage. On our part we shall spare no labour to accomplish the original object of this journal, which was to establish a NATIONAL WORK, *devoted exclusively to the improvement of Medical Science, and to the elevation of the character and dignity of the profession, to the entire rejection of all* LOCAL *and* INDIVIDUAL *interests* and PARTY *views.*

In the selection of original papers, we shall give preference always to those of *practical* value, entirely excluding such as do not convey useful information and will not be creditable to our country abroad.

In the department of Reviews and Bibliographical Notices, we shall endeavour to make our readers acquainted, at the earliest possible period, with all the most important new works, domestic and foreign; and while the opinions of the authors will be freely canvassed, it will be required that criticisms shall be made with candour, and in that temperate and courteous tone which alone comports with the dignity of science. These articles are always authenticated by the author's signature, which, by securing to him the credit of his labour, affords a stimulus to perform it well, and at the same time, by subjecting him to the responsibility of authorship, tends to restrict criticism within proper bounds.

The Summary will present a complete and condensed record of all the Discoveries and Improvements in the medical sciences, compiled from the various journals of Europe and America. Most of these journals are regularly received in exchange, and these, with others, furnished by the liberality of our publishers, afford us the most ample means of presenting the earliest intelligence of every new fact or suggestion of practical value that is offered.

The profession, in every part of the union, are invited to record, in its pages, the results of their observations and experience. Every physician is deeply interested in the promotion of the objects which it is the aim of this journal to advance, and he will benefit himself by contributing to its success.

The following works have been received:—

A System of Human Anatomy, General and Special. By ERASMUS WILSON, M. D., Lecturer on Anatomy. London. Second American edition, edited by PAUL B. GODDARD, A. M., M. D., Lecturer on Anatomy and Demonstrator in the University of Pennsylvania, &c. &c.; with over two hundred illustrations by Gilbert. From the second London edition. Philadelphia, Lea & Blanchard, 1844. (From the publishers.)

A Manual of Chemistry, containing a condensed view of the present state of the Science, with copious references to more extensive treatises, original papers, &c., intended as a Text Book for Medical Schools, Colleges and Academies. By LEWIS C. BECK, M. D., Professor of Chemistry in Rutger's Medical College, New Jersey, and in the Albany Medical College. Fourth edition, revised and illustrated, with numerous wood cuts. New York: W. E. Dean, 1844. (From the publisher.)

A Practical Treatise on Midwifery: exhibiting the present advanced state of the Science. By F. J. Moreau, Professor of Midwifery and the Diseases of Women and Children, in the Faculty of Medicine of Paris, &c. &c. &c. Translated from the French by Thomas Forrest Betton, M. D., and edited by Paul B. Goddard, A. M., M. D., Lecturer on Anatomy, and Demonstrator in the University of Pennsylvania, &c. &c. &c., with eighty plates, comprising numerous illustrations. Philadelphia, Carey & Hart, for J. N. Loomis, 1844. (From the publishers.)

The Anatomical Atlas, Illustrative of the Structure of the Human Body. By Henry H. Smith, M. D., Fellow of the College of Physicians, under the supervision of William E. Horner, M. D., Professor of Anatomy in the University of Pennsylvania. Parts iii., iv. and v. Philadelphia, Lea & Blanchard, 1844.

Human Health; or the Influence of Atmosphere and Locality; change of air and climate; food, clothing, bathing and mineral springs, exercise, sleep, corporeal and intellectual pursuits, &c. &c., on healthy man; constituting Elements of Hygiene. By Robley Dunglison, M. D., Professor of Jefferson Medical College, &c. &c. A New Edition, with many modifications and additions. Philadelphia, Lea & Blanchard, 1844. (From the publishers.)

The Cyclopedia of Practical Medicine, edited by John Forbes, M. D., F. R. S., Alexander Tweedie, M. D., F. R. S., and John Conolly, M. D., Revised with Additions. By Robley Dunglison, M. D. Parts viii., ix., x., xi., xii., xiii. and xiv.: Philadelphia, Lea & Blanchard, 1844.

Medico-Chirurgical Transactions, published by the Royal Medical and Chirurgical Society of London. Second series, vol. viii. London, 1843. (From the society.)

Miscellaneous Contributions to Pathology and Therapeutics; being a series of original and practical papers on Rickets, Hydrocephalus, Impotence and Sterility, Pulmonary Apoplexy and Hæmoptysis, &c. &c. By James Richard Smyth, M. D. London, Simpson, Marshall & Co., 1844. (From the author.)

Medical Communications of the Massachusetts Medical Society, vol. vii., part iii. Boston, 1844. (From the society.)

A Treatise on the Medical Jurisprudence of Insanity. By J. Ray, M. D., Superintendent of the Maine Insane Asylum, second edition, with additions. Boston, W. D. Ticknor & Co., 1844. (From the publishers.)

Natural History, Pathology and Treatment of the Epidemic Fever, at present prevailing in Edinburgh and other towns, Illustrated by Cases and Dissections. By John Rose Cormack, M. D., Edin., F. R. S. E., Fellow of the Royal College of Physicians of Edinburgh, Physician to the Royal Infirmary. London: John Churchill, 1843. (From the author.)

The Oculist's Vade-Mecum: a complete Practical System of Ophthalmic Surgery, with numerous wood-cuts and coloured engravings of the diseases and operations on the eye. By John Walker, M. D., Surgeon to the Manchester Eye Hospital, formerly Lecturer on the Eye, in the Manchester Royal School of Anatomy and Medicine, &c. London, 1843. (From the author.)

Uber eine neue Reihe subcutaner Operationen. Von Dr. W. Hennemann. Rostock, 1843. (From Dr. Oppenheim.)

Beweis der von der Begattung unabhängigen periodischen Reifung, und Loslösung der Eir der Säugethiere und des Menchen als der ersten, Bedingung ihrer Fortpflanzung. Von Th. L. W. Bischoff, Doctor der Medicin, &c. &c. Giesen, 1844. (From Dr. Oppenheim.)

Drei chirurgische Abhandlungen, über die plastische Chirurgie des Celsus,

über organische Verwachsung, und den in das Fleisch gewachsenen Nagel. Von Dr. Edward Zeis. Dresden, 1843. (From Dr. Oppenheim.)

Traité sur l'art de saisir par la vue les mots parlés, comme moyen de suppléer, autant que possible, à l'ouïe des personnes sourdes ou dures d'oreille. Par Edouard Schmalz. Leipsic, 1844. (From Dr. Oppenheim.)

Principles of Pathology and Practice of Medicine. By John Mackintosh, M. D., Lecturer on the Practice of Physic in Edinburgh, &c. &c. &c. Fourth American, from the last London edition, with notes and additions. By Samuel G. Morton, M. D., formerly Physician to the Philadelphia Hospital, &c. Philadelphia, Lindsay & Blakiston, 1844. (From the publishers.)

Dissertation on the respect due to the Medical Profession, and the reasons that it is not awarded by the community. By Worthington Hooker, M. D. Read at the annual meeting of the Connecticut Medical Society, May 8, 1844. Norwich, 1844. (From the author.)

An Essay on the Philosophy of Medical Science. By Elisha Bartlett, Professor of the Theory and Practice of Physic in the University of Maryland. Philadelphia, Lea & Blanchard, 1844. (From the author.)

Proceedings of the Medical Society, of the State of Tennessee, at the fifteenth annual meeting, held in the City Hall, Nashville, May, 1844. (From the society.)

Annual Announcement of the Medical Department of the St. Louis University, Session 1843–4. St. Louis, 1844. (From the Faculty.)

A Treatise on Hare-Lip and its Treatment. By Dr. S. P. Hullihen, of Wheeling, Va. (From the author.)

The Medical Student; or Aid to the Study of Medicine. A revised and modified edition. By Robley Dunglison, M. D., Professor of the Institutes of Medicine, &c. &c. Philadelphia, Lea & Blanchard, 1844. (From the publishers.)

The Provincial Medical & Surgical Journal, June, July and August, 1844. (In exchange.)

The Medical Times, June, July and August, 1844. (In exchange.)

The Edinburgh Medical & Surgical Journal, July, 1844. (In exchange.)

The Medico-Chirurgical Review, July, 1844. (In exchange.)

The British & Foreign Medical Review, July, 1844. (In exchange.)

The London Medical Gazette, June, July and August, 1844. (In exchange.)

The London & Edinburgh Monthly Journal of Medical Science, June, July and August, 1844. (In exchange.)

The Retrospect of Practical Medicine and Surgery, Jan. to July, 1844. (In exchange.)

The Dublin Medical Press, June, July and August, 1844. (In exchange.)

Zeitschrift für die gesammte Medicin. mit besonderer Rücksicht auf Hospitalpraxis und ausländische Literatur. May, June, July, 1844. (In exchange.)

The Select Medical Library, July, 1844. Lee's Theory and Practice of Midwifery. (In exchange.)

The Bulletin of Medical Science, July, August and September, 1844. (In exchange.)

The Boston Medical and Surgical Journal, July, August and September, 1844. (In exchange.)

The American Journal of Insanity, edited by the Officers of the New York State Lunatic Asylum, Utica. Vol. i. No. 1. (From Dr. Brigham.)

The New York Journal of Medicine and the Collateral Sciences, July and September, 1844. (In exchange.)

The American Journal of Science and the Arts, July, 1844. (In exchange.)

The Western Journal of Medicine and Surgery, July and August, 1844. (In exchange.)

The American Journal and Library of Dental Science, June and September, 1844. (In exchange.)

The Western Lancet, June, July and August, 1844. (In exchange.)

The American Journal of Pharmacy, July, 1844. (In exchange.)

Journal of Health, conducted by the Physicians of the Cincinnati Dispensary and Vaccine Institution. Cincinnati, July, 1844. (From Dr. Mendenhall.)

The St. Louis Medical and Surgical Journal, July, August, September. (In exchange.)

The Illinois Medical and Surgical Journal, August and September, 1844. (In exchange.)

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to Isaac Hays, Md., Editor of the Amer. Journ. of Med. Sci., care of Messrs. Lea and Blanchard, Philadelphia. Parcels directed as above, and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London*, or to Wiley & Putnam, *New York*, or W. D. Ticknor, *Boston*, or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Lea & Blanchard.

☞ The advertisement sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers, under whose exclusive control it is.

ERRATA.

Page 388, line 14 from top, for *Martin* read *Bonnet.*
" " 6 bottom, *Martin* read *Bonnet.*

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VIII. Traité Clinique et Pratique des Maladies des Enfants; par MM. Rilliet et Barthez, Docteurs en Médecine, &c. &c. Tuberculizations. Tome troisième. Paris, 1843: pp. 743.

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An exposition of the condition and management of the Cotton Factories of Lower Austria, with particular reference to the Moral, Intellectual and Physical condition of the Children employed in them, with the existing legal provisions on this subject. By J. J. Knolz, M. D. Vienna, 1843. 444

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An Inquiry into the Periodical Movement of the Human Organism in Health and Disease. By George Schweig. - - - - - - - - 446

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XXIII. The Medical Student, or Aid to the Study of Medicine; a revised and modified edition. By Robley Dunglison, M. D., Professor of the Institutes of Medicine, &c. &c. Philadelphia, Lea & Blanchard, 1844: pp. 311, 12mo. - - - - - - - - - - - - - 453

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XXV. Methodus Medendi; or the Description and Treatment of the Principal Diseases incident to the Human Frame. By Henry McCormac, M. D., Consulting Physician to the Belfast Hospital, and Professor of the Theory and Practice of Medicine in the Royal Belfast Institution. London, 1843: pp. 574, 8vo. - - - - - - - - - 455

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THE

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MEDICAL SCIENCES.

OCTOBER, 1844.

ART. I.—*On the Bilateral Operation of Lithotomy; and on Lithotrity in the Female.* By JOHN C. WARREN, M. D., Professor of Anatomy and Operative Surgery in Harvard University, Boston.

THE operation of lithotomy is so rare in this place, that it would demand a longer period than the life of one practitioner to settle the question, in this part of the country, as to the best mode of operating. In the course of forty years, I have been called on to perform all the operations of lithotomy which have been done, during that period, in the city of Boston. The whole number has not exceeded twenty-five, inclusive of lithotrity cases, in a population which, during the period mentioned, has increased from about 26,000 to more than 100,000. Of the twenty-five persons thus operated on, not more than three were natives of Boston or its vicinity; the others came from the remote parts of Massachusetts, from New Hampshire, from a calcareous district in Maine, and from Nova Scotia. Perhaps it may be proper to add, that, of the cases I have operated on, two have died; one of these was a case of very unfavourable nature, the patient being of gross constitution, bad health, and having a very large stone adherent to the anterior part of the bladder: he died of suppuration in the pelvis. The other was the case of a patient who was doing perfectly well, but, on the fifth day from the operation, he indulged himself in eating heartily: he died of general peritonitis.

The comparative immunity of this city, and of this section of the country, has been a subject of inquiry; but, as we are ignorant of the causes which favour the production of urinary calculi generally, we cannot expect to ascertain the reasons why the inhabitants of this vicinity are exempted. To resolve the question satisfactorily, will require an extensive collection of observations in the different sections of this country.

It may be stated that Boston and its immediate vicinity contain no calcareous rocks; that the spring-water of Boston is abundant in muriatic salts, and that the whole of this region is exempted from intermittent fever. I am induced to state this last fact, because some authors have expressed the opinion that stone and intermittent fever have their origin in a state of constitution generated by miasma. Most of the facts, within my knowledge, would lead me to the belief that the stone is more likely to be produced by calcareous water than by atmospheric miasmata; although I am aware that there is a strong objection to this last opinion, in the diversity of composition of calculous concretions, as some of them are entirely destitute of calcareous substance. It is known, moreover, that, in the calcareous regions of this country, and especially on the banks of the great rivers, which run through a calcareous soil, the occurrence of urinary calculus is vastly more common than it is here. A distinguished surgeon of Montreal informed me that, when he had been in practice but a few years, he had operated on forty cases of stone in the bladder. Dr. Dudley, of Lexington, Kentucky, has operated on from a hundred and fifty to two hundred cases. The operations by Drs. Mott, Stevens and others in New York; by Drs. Gibson, Randolph and other surgeons in Philadelphia; and by Dr. Smith and various gentlemen of Baltimore, are very frequent. Happening to be in Philadelphia in the spring of 1843, I saw two cases operated on by Dr. Norris, one case of lithotrity by Dr. Mütter, and the latter gentleman had another case for lithotomy, on which he was about to operate. It may be further remarked that, in all the places last mentioned, intermittent fever exists, and, so far as I know, has always existed.

The particular object which I have in view, in this communication, is to direct the attention of our profession to the best mode of doing the operation of lithotomy. I have, till recently, performed the lateral operation, formerly with the gorget, and latterly with the knife. In the two cases alluded to above, which terminated unfavourably, the gorget was employed. Accident led me, a year or two since, to examine the merits of the bilateral operation more exactly than I had ever done before. In this investigation, I many times dissected the organs concerned in this operation, both before and after having done it on the dead body. The result was so satisfactory that, in a case particularly adapted for this mode of operating, I ventured to do it on the living body, and found it to be comparatively so easy in the performance, and so successful in the result, that, in the next case which presented itself, I was induced to repeat it. These cases I ask leave to bring before the profession in this country, in order to invite their examination into the merits of this mode of extracting stone from the bladder.

Case I.—G. T., a married man and a farmer, born in Middlebury, Massachusetts, and 53 years of age, was admitted to the Massachusetts General Hospital on the 13th of January, 1842, for incontinence of urine.

A very imperfect history of the case is given in the records of the hospital, the regular house-surgeon being absent at the time of his admission. It appears, however, that he was, for two months, in 1824, a patient in the house, in consequence of some difficulty about the urinary organs.

For the past sixteen years he has been obliged to use the catheter to draw off his water. During this period he suffered no pain, until two years since, when an abscess formed, and broke near the neck of the bladder. Since then he has suffered great and gradually increasing pain, which has now become constant and almost insupportable.

His urine is, and has been for some time back, discharged involuntarily and continually; it is intermixed with pus and mucus, and of an excessively fetid odour; it is often coloured with blood. The urethra, he reports, is occasionally obstructed by this muco-purulent matter, which is removed by passing the catheter. Such is the substance of his history, as taken from the records.

The glans penis was enlarged; the prepuce was elongated, so as to form phymosis. The perinæum was the seat of a hard tumour, about an inch in length, extended between the scrotum and the anus: this tumour was probably a consequence of the chronic inflammation, to which these parts had been so long subjected.

His external appearance was marked by suffering; he was pallid and emaciated; the muscles of his face were habitually contracted. The constant discharge of offensive urine and pus, and the consequent contamination of his clothes and bed-clothes, rendered the business of examination more than commonly unpleasant.

An instrument, being passed by Dr. Hayward, immediately struck a calculous substance. Two or three days after, I examined him in company with Dr. H., and, introducing a sound, found it arrested, after it had penetrated about three-fourths of the length of the instrument, by a stone, which was evidently not situated in the bladder. An attempt to cause it to penetrate beyond this point was not, at this time, successful, and, the patient complaining of great suffering from the examination, the instrument was withdrawn. I then made an examination per anum, and found this part exceedingly sensitive, especially on its anterior wall, so that the contact of the finger produced evacuation of flatus and fæces. The prostate gland was much enlarged, and, at one point, appeared very hard.

On a subsequent examination, the sound was passed a little way on one side of the stone, and afterwards Dr. Hayward, who had charge of the patient at the time, passed it beyond this stone, and apparently into the urinary bladder. Another examination, which I made some time after, satisfied me of the existence of two stones—one of which occupied the neck of the bladder, and entered into that part of the urethra surrounded by the prostate gland. This first stone prevented any closure of the neck of the bladder, and was thus the cause of the non-retention of the urine. The other

stone appeared to be in the urinary bladder, which was, however, excessively contracted, from its not being at any time dilated with the urine.

The patient was ordered to confine himself, in a great measure, to the horizontal posture; leeches were applied to the perinæum once in three days, with the hope of lessening the chronic inflammation in and about the urinary passages. The bowels were carefully regulated, and he took, occasionally, small doses of nitrate of potassa; his food was of a generous nature in a moderate quantity.

Under this treatment, aided by the use of opiates, his sufferings were somewhat diminished, and his general health improved, so that he was thought to be in a proper state for an operation, for which he was very anxious. The case being of a peculiar character in some respects, it appeared to me that the lateral operation of lithotomy could not be judiciously employed for the following reasons:—

First, a stone being apparently wedged in the prostate gland, and occupying the whole space of the urethra within that part, an incision of the left lobe of the prostate, of sufficient size to remove this stone, could not be made with the usual instrument, on account of the interference of the stone with the extremity of the probe-pointed knife, or gorget.

Second, an incision down to the prostate, in the part where the lateral operation is usually performed, would be unnecessarily circuitous.

Third, there would probably be a difficulty in manœuvring the forceps in the deep wound made in the lateral operation, in consequence of there being no cavity about the stone.

For the reasons above stated, I was led to consider the practicability of other modes of removing the stone. Lithotrity, of course, presented itself in the first place, but a little reflection showed, that the objection to the use of the forceps in the lateral operation might hold with still more force in regard to lithotrity, since the want of room would prevent the opening of the instruments, which are used for seizing and breaking the stone.

The operation by the rectum could have been executed with great facility from the proximity of this part to the stone, and the great relaxation of the anus: the objection to this operation was the probability of a recto-vesical fistula.

Another mode of operating, which presented itself, was, the transverse incision of the perinæum, according to the method recorded in the works of Celsus, and since improved by Dupuytren and other distinguished surgeons. This manner of operating seemed to have the advantage, first, of conducting to the stone by the shortest route from the exterior of the perinæum, and secondly, that, in this manner, fewer and less important parts would be wounded than in any other. This method was, therefore, concluded on.

The patient was prepared by taking a purgative the day previous, and on the morning of the operation, a common enema, followed by another of two ounces of water, containing two hundred drops of the tincture of opium.

The operation was performed February 5th, in the presence of the medical class, and various medical gentlemen of the city; and I was assisted particularly by Drs. Hayward, Townsend, and Jeffries, attending and consulting surgeons of the hospital.

In the first place, a sound was introduced to ascertain the existence of the stone, which was very readily done, because an instrument could not enter the bladder without striking the stone. The rectum was next examined, to ascertain if it were free from fæces.

After these preliminary arrangements, the patient's hands and feet were bound together in the mode usual in this operation. A staff of large dimensions, grooved as usual, was then placed in the urethra, conducted to the stone, and there fixed. A crescentic incision was now made across the perinæum, between the scrotum, on the fore-part, and the verge of the anus, on the back part, its concavity looking towards the anus. This incision was two inches and a half long, three-fourths of an inch in front of the anus, with the two extremities of the wound directed towards the tuberosities of the ischia. It divided the skin, superficial fascia of the perinæum, adipose tissue, and exposed the bulb of the urethra. The latter was then raised, and the urethra being drawn by the staff towards the perinæum, while the operator passed his finger into the rectum, a longitudinal incision was made in the membranous part of the urethra, behind the bulb and in front of the prostate gland.

A straight, short, narrow, probe-pointed knife, with a long handle, was then passed along the groove of the staff into the bladder, with some interference from the stone, which prevented it from readily entering.* The staff was now withdrawn, and the knife, supported by the forefinger of the left hand, was directed towards the left tuberosity of the ischium, cutting the prostate gland to the extent of three-fourths of an inch:—the same was done on the other side.

The finger then passed freely into the bladder, pushing before it a considerable calculus, which could not have been seized in its original situation, on account of the difficulty in expanding the forceps. The knife was now withdrawn, and upon the finger remaining in the bladder, the forceps were introduced. By them the stone was readily struck, immediately grasped, and brought to the orifice of the wound: but having been seized by its longitudinal diameter, it could not pass, and was, therefore, dropped, and laid

* The lithotome proposed by Dupuytren, does not appear to me to be an instrument which is calculated to make an incision of a definite extent, as, on account of the length of its blades, there is a spring or yielding of them which renders the wound of the prostate gland smaller than the opening of the instrument. Another objection to its use is, its complexity, for complex instruments should always be avoided, when simple ones may be made to answer. A third objection is, that this instrument, after its introduction into the bladder, requires to be turned over, a movement by which the instrument might possibly be displaced.

hold of according to the short diameter. It was then readily extracted by slight lateral movements, tending to the direction of the axis of the prostate gland. The finger was then passed into the bladder, and discovered another stone, smaller than the first, which was at once seized and extracted.

Not more than two ounces of blood were lost in the operation; and the time occupied was three or four minutes; but not being in the habit of measuring time by the watch in these cases, the precise duration is unknown. The patient being loosened from confinement, seemed to be very happy; and after being placed in his bed, said that he had not been so easy for the two last years. The largest stone was of a pyriform shape, and measured one inch and a half in length, by one in width, and weighed nine drachms, nine grains: the smaller was of a cubical form, about three-fourths of an inch in diameter, and weighed three drachms, thirty-six grains:—the whole weight being twelve drachms and forty-five grains. They were both composed of the phosphate of lime.

The subsequent symptoms were so very mild as scarcely to require any record. He had hardly any acceleration of the pulse, pain, heat or other marks of inflammation: he slept well, in consequence of the great relief from pain he had experienced. At the end of a week he was directed to rise in bed, which, from habits of long inactivity, he was very reluctant to do; at the end of a fortnight he was allowed solid food, and directed to get out of bed.

Shortly after this, perceiving a white covering to the wound, I passed the finger into it, and discovered that the whole of it was lined with a calcareous incrustation, consisting apparently of phosphate of lime. Cloths, moistened with diluted muriatic acid, were then applied within the wound; the patient was also directed to take the same acid internally as freely as he could. The calcareous appearances soon afterwards went off, and the wound contracted to about the size of a quill. A catheter was now introduced into the bladder, and met with a slight obstruction in the prostate gland, which was readily overcome. This instrument was afterwards used daily, and sometimes retained for a short period: the wound was also directed to be touched daily with the nitrate of silver.

On the 31st of March, the patient was, by his own request, discharged, and went home to his family; the wound had not entirely closed, but was in a favourable condition.

Remarks.—The operation of lithotomy, according to the method of Celsus, has been rarely done in Great Britain, or in this country.* It presents

* I call this the method of Celsus, but it is, in fact, a variation from his method so considerable as almost to amount to a different operation. The operation of Celsus was performed without a staff or sound; his crescentic incision of the skin had its horns or extremities pointing forwards towards the thighs, "cornibus ad coxas paulum spectantibus," (Cels. Lib. vii. sec. xxvi.,) instead of backwards towards the tuberosities of the ischia. Again, by his method the bladder was penetrated at its neck, without touching

some advantages, which are well worthy the consideration of those who may have occasion to perform the operation of lithotomy. These advantages appear to be:—

First, that the parts cut are more simple in structure than those concerned in the lateral operation: the nerves and the blood-vessels are necessarily smaller as they approach the median line.

Secondly, the pain and hemorrhage are, consequently, less than in the lateral operation.

Thirdly, the access to the membranous part of the urethra, and to the bladder is more direct.

Fourthly, the prostate gland being more completely exposed, may be divided with more precision.

Fifthly, the opening into the bladder may be double the size of that made in the lateral operation, without increasing the danger of cutting the vesical plexus of veins, the prostatic fascia, or the internal pudic artery.

Sixthly, the danger of subsequent inflammation is decidedly less.

The principal objection to this operation is the risk of wounding the rectum. This is certainly very considerable: but by drawing the staff with the urethra and prostate gland, towards the symphysis pubis, and with the finger of the left hand upon or in the rectum, drawing that intestine in the direction of the os sacrum, this danger will be found less, perhaps, than in the lateral operation. It may be objected, that in the present case, the wound was longer in healing than it frequently is after the lateral operation. The reason of this, however, is to be found, not in the form and direction of the wound, or in the parts implicated, but in the morbid state of these parts, and general condition of the patient, previous to the operation.

Although I should certainly not feel justified in recommending this operation for general use, from the experience of a single case, yet so far as this experience extends, aided by the light afforded by many dissections, made with the view to this subject, I should feel disposed to employ this in most cases where lithotomy was required, in preference to the lateral operation.

Since the occurrence of this case, another has presented itself, which I shall now proceed to relate.

Case II.—*Nov. 6th*, 1843. Matthew Ryan, aged 14, a native of Halifax, Nova Scotia, has been affected for five years with signs of stone in the

the membranous part of the urethra: this would, of course, endanger the incision of the vasa deferentia and vesiculæ seminales. The method, originally proposed by Celsus, was improved by Paulus Ægineta, and afterwards essentially altered by Heister. But in its present form, and that employed by me, it was originally proposed by that accomplished gentleman, and eminent professor of the Parisian School of Medicine, M. Ribes, who described his plan to Chaussier, without publishing it at the time. Dupuytren, who was at one time colleague of Chaussier, afterwards adopted the operation, almost exactly, as proposed by Ribes, actually performed and introduced it into practice, as more eligible than the lateral operation. He also illustrated it by descriptions and engravings, which gave a scientific character and stability to the operation it had not before possessed.

bladder. During this period, he has been occasionally sounded by medical men, and the existence of a calculus made certain. He is of small size, having the appearance of a boy seven or eight years old: the development of his body has been retarded, apparently, by the severity of pain he has suffered. The organs of generation are particularly small. He has now frequent inclination to pass urine, but does so in very small quantities, and not in a stream, except after a dose of oil: there is constant dribbling.

On sounding the boy, a stone was readily struck, as soon as the instrument entered the bladder: the play of the sound was, however, so small as to lead to the opinion that the bladder was very much contracted. The stone, as far as could be judged by the sound, was hard, and an examination by the rectum showed it to be nearly an inch in length, and almost as much in thickness.

The existence of a stone having thus been satisfactorily settled, it was next to be considered, what mode of relieving the patient was proper to be adopted. The operation of lithotrity naturally presented itself, in the first instance, but the bladder being very small, and the urethra narrow, there was danger that the stone could not be broken without injuring the bladder, and that if it were broken, of which there was some doubt, on account of its hardness, the urethra was too small to give issue to the fragments. These circumstances led to the rejection of lithotrity: it was, therefore, determined to perform the operation of lithotomy, as soon as the boy became accustomed to the atmosphere of the hospital.*

After the boy had been in the Massachusetts General Hospital about

* A somewhat similar case occurred in the Hospital Necker, in Paris, in May, 1838. The distinguished lithotritist and author, Mons. Civiale, carried me at this period to see a patient of his in the Hospital Necker. The patient was a boy 14 years old, with the appearance of the age of six or seven years. Mons. Civiale found a stone of considerable size in his bladder, and by the lithontripter readily crushed it. On the day following, he again carried me to see him, informing me that the boy was very ill.

When we arrived at the hospital, we met there Mons. Bérard, the younger, one of the able surgeons of that hospital. On examining the boy, together, we found him with a pulse of 130, suffering great pain in the right flank, and a retention of urine. Mons. Bérard seemed to be of opinion, that the symptoms arose from inflammation in the right kidney, that the patient would succumb, and that no operation would save his life. Mons. Civiale thought the symptoms arose from a portion of calculus impacted in the membranous part of the urethra; he thought the operation of lithotomy might, under these circumstances, afford relief. Mons. Civiale then did me the honour of asking my opinion. It appeared to me, that the operation of lithotomy might, and probably would, afford relief: that if it were true the kidney and the bladder were in a state of inflammation, the operation would not be injurious, but, in consequence of the blood abstracted, it might be beneficial.

The patient was then ordered on the table, and Mons. Bérard declining to operate, the operation was performed in the lateral method by Mons. Civiale, and fragments of stone were extracted to the amount of about a quarter of an ounce. The boy was carried to bed in a state of comparative ease; on the next day he was in a comfortable condition; the following day I left Paris, and never heard the final result of this case.

a fortnight, the operation of lithotomy was performed. The preparatory arrangements were as follows. The boy was directed to take his usual food till the day before the operation; every evening he had an enema of thirty drops of the tincture of opium in a little warm water, to relieve his pain. On the day previous to the operation, he took a small dose of castor oil: three hours before he had a common enema, and thirty drops of laudanum by the mouth: a ribbon was applied around the penis, and the patient carefully watched to prevent his discharging his urine.

The patient being placed on the table, his hands and feet were bound together, and the rectum was examined, to ascertain if it were free from fæces. A staff was then introduced, and the stone immediately struck: the instrument was then put into the hands of an assistant. The skin of the perinæum being made tense by the thumb and forefinger of the left hand, an incision of two inches was carried across the perinæum, midway between the scrotum and the anus, of a crescentic form, the points of the crescent looking towards the tuberosities of the ischia. The superficial fascia was next divided. The assistant was then requested to draw the instrument upwards, or towards the symphysis pubis, to make room between the urethra and rectum. By two cuts, the membranous part of the urethra was exposed behind the bulb, and laid open: the bulb itself not being uncovered.

A straight probed bistoury, having a blade two inches long, was then pushed into the groove in the staff, and the operator was about to pass it into the bladder, when the patient drew back, and thus separated the two instruments. By means of the forefinger of the left hand, passed into the groove of the staff, the probe-pointed knife was readily restored to its situation in the groove, and then the operator, taking the handle of the staff in his left hand, and bringing it downwards, the knife passed along the groove into the bladder. No urine was discharged then, or at any period of the operation, except when the staff was introduced, at which time the little that had been secreted made its escape. Then striking the stone with the end of the probe-pointed knife, to ascertain its entrance into the bladder, the staff was withdrawn.

The forefinger of the left hand was next passed along the back of the knife, and served to guide its incision, which was made very small, at first on the left, and then on the right side of the prostate. The forefinger following the knife was applied in search of the stone, but not coming in immediate contact with it, and knowing the stone could be instantly found by the rectum, I introduced the finger into the intestine, and pushed up the stone towards the wound. Having enlarged the opening with a common knife, I pushed the stone directly through the wound thus made, and extracted it without the aid of the forceps. The opening of the bladder was, of course, the smallest possible, and barely allowed the stone to pass through. The loss of blood was very small: the operation ended, the patient was carried to his bed.

In the afternoon he had some pain, and being much accustomed to the

use of opium, thirty drops of M. Munn's Elixir were given to relieve him. In the evening, five ounces of blood were drawn from the arm, as a preventive of inflammation; a precautionary measure I am in the habit of adopting after capital operations, in which there has been no great loss of blood.

On the next day, the boy was quite comfortable. A pledget introduced into the wound after the operation having come out, another was passed to the bottom of the wound; the urine having issued as much by the penis as by the wound.

No remarkable changes occurred afterwards: the pulse gradually sunk to ninety; the urine resumed its natural course, and the boy's appetite became quite outrageous, before he could with safety be indulged with food. In a week after the operation, he had half a pint of broth a day, on the tenth day some bread, and was allowed to sit up, and walk around.

On the fifteenth day, the urine had ceased to pass through the wound, and issued altogether through the urethra. The patient had already a control over it, which he had not enjoyed for many years. The wound, being free from the irritation of urine, was contracting and cicatrizing rapidly.

Dec. 18*th*, 1843. His mother having reported that he had been unable to pass his urine, and that he frequently pulled at the præputium, led me to introduce a sound into the bladder, which passed readily, and encountered nothing extraordinary. The finger being introduced into the rectum, the bladder was distinctly felt in its normal state. He was ordered a dose of oleum ricini, and a diminution of food: it being thought likely the pain he had experienced was colic, and that his pulling the prepuce, when he felt the pain, was the effect of habit.

On the 14th, as he represented that his pain still continued, I introduced the sound again, and ascertained, that the bladder contained no extraneous substance: this was also done, at my request, by the house-surgeon. I was then led to suspect some trouble in the cavity of the abdomen, especially on learning that he had eaten extravagantly, and of pernicious articles of food, which had been given him by some person unknown.

On examination of the abdomen, I found it tumid, tender; his appetite had failed; his pulse had quickened to 130. His bowels were again cleansed by castor oil, a sinapism was applied to the epigastric region, and mild enemata used occasionally: he was also restricted to the use of water.

On the 15th, the symptoms continuing much the same, although there was a very free discharge of urine in his bed, he was ordered a solution of the tartrate of antimony, to be taken in nauseating doses. This I preferred to bleeding by the arm, or leeches, on account of the debilitating effect produced by the abstraction of blood, immediately after the operation, and its terrifying influence on this boy's mind.

Dec. 18*th*. The appearances are quite favourable: the appetite is returning; he is able to pass the urine in a vessel. The urine, tested by litmus paper, was found to be acid.

Dec. 28*th*. He is now quite well, passes his urine naturally in every

respect, and no longer has involuntary discharges of it during his sleep. He proposes to return to Halifax on the first of January, 1844.

Remarks.—The result of this case confirms the favourable opinion made by the preceding. The simplicity of the operation, the comparatively small pain from the incisions, the facility of seizing and removing the stone, the very slight loss of blood, and the absence of any severe consecutive symptoms, are facts which concur in giving a favourable impression as to this mode of operating. Whether the results of a considerable number of cases would be equally favourable, cannot be determined but by a long series of trials.

Lithotrity in the Female.

The lithotritic operation in the female is generally considered to be one of great facility, and the anatomy of the organs concerned certainly favours this opinion. Having had occasion to resort to this operation two or three times, I found it less easy than I had expected. A principal difficulty, encountered in cases which I have treated, arose from excessive sensibility of the bladder, which could not be obviated by narcotics of every description, applied in every possible mode. In doing these operations, I experienced some inconvenience from the want of sufficiently minute descriptions of the mode of performing it, and of the circumstances attending it. Wit the hope that those who may have occasion to employ it, may derive advantage from the publication of such details, I shall venture to give one of these cases with all its minutiæ.

Case.—Mrs. ——, a lady about 50 years of age, applied to me in the month of May, 1840. She informed me that she was affected with a dull, constant pain in the right lumbar region; this pain, though not acute, was of a distressing nature, being accompanied by a sense of weight or pressure. Occasionally, she experienced numbness in the side, extending into the corresponding limb, without, however, affecting the feeling or the motion of this limb. The flow of urine was generally free, and even more frequent than natural, appearing, at times, to be connected with a pain in the right side of the abdomen; its appearance to the eye was healthy. The other functions, at the time I saw her, were in the natural state.

She also informed me that three years before, she had an attack of violent pain in the right lumbar region, which, after a paroxysm of two days duration, terminated in the discharge from the bladder of a calculous concretion: this, I afterwards learned, was probably composed of the ammoniaco-magnesian phosphate. Since that period of time, she had had some similar paroxysms, but without passing any more calculi.

Concluding, from the history, that this lady was affected with calculous concretions in the pelvis of the kidney, I recommended her what I had used with remarkable advantage, the bicarbonate of potassa, to the amount of

three drachms in the day, which was continued for three or four weeks. At the same time, blisters were applied frequently to the back, the bowels were kept open, and the warm bath was used every five or six days. Under this treatment she became more easy, and felt, at first, very confident of being essentially better; but after a while, as she ceased to improve, I desired to examine the affected part, and, on making pressure immediately below the ribs of the right side, near the spine in the region of the kidney, I perceived a slight induration. Pressure upon this part produced some uneasiness, and a sense of numbness through the corresponding limb. Finding, as already stated, that the case was not essentially improved, I then advised the use of the diluted sulphuric acid, mixed in a confection, and taken as largely as she could bear. This was continued three or four weeks without any decided effect, with the exception of a cloud in the urine, which did not appear when the acid was not employed. I therefore advised her return to the bicarbonate of potassa, which was continued for the remainder of the summer, about three months.

During the latter part of this summer, 1840, she began to be affected with paroxysms of pain in the right side, thence shooting down the right side of the abdomen, and through the right lower extremity. To mitigate these, I advised the following course whenever they occurred; first, hot fomentations of the decoction of poppies to the right lumbar and iliac regions; secondly, large enemata of warm water, containing a drachm of the tincture of opium; thirdly, the warm bath. These applications, with some minor auxiliaries, generally relieved her in a few hours, leaving her, however, very ill from the effects of the opium.

In the latter part of the autumn, after one of these paroxysms, she felt, as she thought, something descend into the bladder; this was soon followed by some pain in the region of that organ, and occasional interruptions to the urinary discharge, the urine having now become offensive. These symptoms making it nearly certain that a stone had passed into the bladder, I requested to sound the patient, and on doing this, I soon detected the stone, which was of small size. Previously to introducing the sound, I injected some warm water, in order to enable me to examine the bladder, with less interference to the coats of that organ. This fluid was retained for an hour, and when it passed off, it was immediately followed by a substance which filled the urethra, and produced considerable pain in the passage. I was sent for again to visit the patient, and having introduced a probe, detected a stone wedged in, filling the urethra. I endeavoured to extract this by a small pair of forceps, but found they could not be passed so as to embrace the stone; I then took a strong curette, and introduced it between the stone and the upper part of the urethra, with the forefinger of the left hand pressed on the internal part of the stone, and thus confined the stone in the passage, so as to prevent it from being pushed back by the curette. By these means I was enabled to insinuate the instrument beyond and behind the stone, and

thus, by the curette in the urethra and the forefinger of the left hand on the outside of this canal, the stone was gradually brought to the meatus, where it experienced a decided opposition. The curette was now withdrawn, the forefinger of the left hand continuing to press the stone to the meatus; the forefinger of the right hand was employed to push the meatus back upon the stone, thus uncovering its extremity. The stone was thus sufficiently exposed to be seized by the forceps and withdrawn, to the great relief of the patient. This calculus was an inch and a half in length, and half an inch in diameter; it was somewhat rough on its surface, and was found, by Dr. Gay, who analyzed a part of it, to be composed of the phosphate and carbonate of lime. She bore the operation with great firmness, and on the following day was free from any material uneasiness; she had a perfect urinary evacuation, and was gratified with the hope of freedom from sufferings under which she had so long laboured.

This agreeable calm was of short duration. Three days after my extraction of this calculus, the patient informed me that she had symptoms of another stone. These symptoms gradually became more distinct, till they assumed a character perfectly decisive; she had frequent inclination to pass water, accompanied with pain in its passage, particularly towards the latter part, sometimes a sudden interruption to its flow; the colour was that of blood, with a mixture of mucus, and there was a sensible movement of the the stone when she turned over in bed. As the injection of warm water had been followed by a favourable result, I repeated it, but without the same success as on the previous trial.

It now appeared necessary to adopt some decided measures for the removal of the calculus, and I therefore presented to my patient the different modes of operating adapted to this object. I explained to her the mode of extraction by dilating the urethra by bougies, by sponge and by the urethral dilator; secondly, by the operation of lithotrity; thirdly, by lithotomy. After some consideration, she agreed to the introduction of the instrument of Heurteloup; but, on repeated trials with this instrument, I found that such was the size of the bladder and the number of plicæ or folds into which its mucous membrane was rolled, when in the contracted state, that it was impossible to seize the stone without the patient's assuming a posture more favourable to the use of the instrument, and the necessary aid of professional persons. I attempted to obviate the difficulty by the previous injection of warm water, but this could not be retained long enough to allow me to make use of the instrument.

The patient now requested me to intermit my efforts, and permit her to employ the specific of Dr. Lee, and to this I readily agreed. The pills of Dr. Lee were taken, and in a few days their effect upon the urine was very remarkable; large quantities of a sandy substance began to appear in the urine, and continued to increase till she had passed two or three drachms in the course of the twenty-four hours. This substance was of a gray colour,

capable of being readily reduced to a fine soft powder, possessing a slightly saline and urinous taste, and was found to be composed of the phosphate of ammonia and magnesia, and some phosphate and carbonate of lime. This deposit continued daily in greater or less quantity, for four weeks, at which time I sounded to ascertain the condition of the stone, and had reason to believe it increased in size, and covered with a rough coating. Presuming that the lithontriptic pills had caused this copious deposit from the urine, I was apprehensive that their effect had been, and would continue to be, to increase the size of the calculus, and, therefore, advised the discontinuance of the medicine.*

The paroxysms of pain, the bloody and mucous discharge with the urine, the frequent interruption of the passage of this fluid by the obstructing calculus, and a general state of debility and difficulty of motion, made it necessary to adopt some measures calculated to remove the stone. At this period the patient was compelled to lie in bed the greater part of the time; she very rarely sat up; her appetite was much diminished; she was obliged to resort to opiates, by enemata or the mouth, and was unable to turn in bed without considerable suffering.

The patient now decided in favour of an attempt to remove the stone by dilating the urethra, and after once or twice using very large bougies, and finding the dilatation could not be accomplished in that way; inferring, also, from the inability of the patient to bear long continued pressure upon the urethra, that the use of the sponge would, probably, be impracticable, I employed the urethral dilator of Weiss, and, after two or three applications, succeeded in dilating to No. 6, as marked by the index of that instrument. I was now enabled to introduce my little finger, so that the point of it entered the cavity of the bladder, and felt great hopes that, after one or two more trials, I should be able to dilate the urethra sufficiently to withdraw the stone entire. But, notwithstanding the courage of my patient, the sensibility produced by the dilatation was so great as to render her unable to bear the further use of the instrument, and it became absolutely necessary to desist from all operations, except those calculated to sooth her pain.

After allowing some time for the patient to recruit, it became a subject of consideration, whether she would submit to the operation of lithotrity or lithotomy. The operation of lithotrity, I assured her, might be employed with almost certain success, but that the time required for its consummation might be considerable; I was also able to assure her that this operation would not be attended with any danger. On the other hand, the operation

* In the case of another lady, a patient of mine, who employed Dr. Lee's lithontriptic pills, the patient was relieved soon after she began to take them, was ultimately cured, and I believe now continues well at the end of a year. The calculi consisted, in the case of this lady, of a great number of lobular stones, each about double the size of a pea, and composed of white carbonate of lime. This lady had employed the alkaline carbonates, before mentioned, and also sulphuric acid without benefit.

of lithotomy, would, undoubtedly, relieve her immediately from her state of suffering, but could not be said to be wholly free from danger.

She wished to know how the operation of lithotomy would be performed, and I endeavoured to explain to her that I should prefer, in her case, the method which had been adopted by my respected instructor, Baron Dubois, by an incision from the superior and anterior part of the urethra towards the symphysis pubis. An incision in this direction, I thought, would give sufficient room for the extraction of a stone of so comparatively moderate a size as hers; for I judged the stone to be about two inches long, and not more than half an inch in diameter. The lateral operation, between the vagina and the ramus of the pubis, I judged, could not be readily done without wounding the vagina, as, the lady having had a number of children, this passage lay close to the bone. In order to aid her in making up her decision between the two operations proposed, she desired a consultation with Dr. Miller, a distinguished surgeon, and Dr. Wing, a near relative; both of them, after due consideration of the circumstances, agreed to recommend the operation of lithotrity, which was assented to, and thereupon commenced.

The patient being placed on a table, about three feet and a half high, supported by the two gentlemen above mentioned, with the aid of Dr. Mason Warren, I first injected the bladder with warm water. I next introduced the brise-pierre, of Heurteloup, and bringing the instrument to an angle of about 50° with the trunk of the body, readily struck the stone in the fundus of the bladder, on the right side of the vagina; then, opening the instrument, caught the stone and crushed it by the screw. The apparatus was now withdrawn, with as large a portion of the stone as I thought would pass through the urethra; some portions of calculus were discharged after the operation; the patient suffered very little.

These proceedings were resumed in two days after, and continued at about the same intervals, until seven sittings had been completed; in each of these, the stone was found with very little difficulty, was crushed, portions extracted, and other portions washed away afterwards by the urinary evacuations. In these operations, the brise-pierre of Heurteloup, the ramaseur de gravier of Civiale, and a shorter brise-pierre, adapted more particularly to the anatomy of the female, which was contrived by Dr. Mason Warren, were employed. On the eighth sitting, there was discovered the slight remains of a calculus, but so small, and so involved in the folds of the mucous membrane of the bladder, that it was impossible to seize it by any instrument, without seizing along with it the mucous coat. After reiterated attempts to remove it by injections, finding that this relic could no longer be felt by the instrument, employed in the most careful manner, I desisted from all further treatment.

From this time the patient was relieved from all her sufferings; the urine flowed in a perfectly natural manner, without interruption, her strength recruited, and, after a winter's confinement, she was enabled, in the spring of

1841, to leave her house and go into the country. No further calculi, nor fragments of them, have since appeared, nor has the patient had any symptoms of calculus, with the exception of a sense of weight in the fundus of the bladder, and a want of perfect contraction of this organ.

In the month of July, 1844, I made this lady a visit. I found her surprisingly recruited; she had recovered the freshness and embonpoint which she formerly possessed. Her strength was fully equal to what it had been previous to her first attack, and was sufficient to allow her to take a part in the most active domestic avocations. She had no trouble whatever remaining in the urinary organs. She, of course, felt very much gratified with the relief she had obtained from the lithotritic operations.

Remarks.—The facts most worthy of notice in this case, are the following:

First, Symptoms of renal calculus, viz.: sensibility in the lumbar region, numbness in the corresponding thigh, and the occurrence of severe paroxysms of pain in the right side of the abdomen.

Second, The sudden cessation of these symptoms on the dropping of the stone from the ureter into the bladder.

Third, Signs of stone in the bladder, viz.: pain in that region, especially on motion, the discharge of offensive urine, mixed with mucus and blood, and the sudden suspension of the flow of urine.

Fourth, The lodgment of a calculus in the urethra, when small enough to enter but too large to pass through this canal; and the retention in the bladder of a calculus too large to enter the urethra.

Fifth, The excessive sensibility of the meatus, preventing its dilatation beyond a certain extent.

Sixth, The excessive sensibility of the inner coat of the bladder on the introduction of instruments and even of water, and, in consequence, the impossibility of retaining a sufficient quantity of water in the bladder to distend it.

Seventh, The consequent occurrence of folds, (plicæ,) in the mucous membrane of the bladder, which involved the stone and prevented it from being seized by the instrument without including the mucous membrane; this constitutes the greatest difficulty in the operation of lithotrity in the female.

Eighth, The uniform position of the calculus in that part of the bladder lying on the right of the vagina, and attainable by the instrument when placed at an angle of 50°, formed between the instrument and the perpendicular line of the body.

Ninth, The curious deposit in the urine from the use of the lithontriptic pills.

Tenth, The perfect restoration of the patient's health and vigour, after all her sufferings from disease and operations.

Boston, Aug. 10th, 1844.

ART. II.—*Practical Observations on Organic Obstructions of the Œsophagus; preceded by a case which called for Œsophagotomy and subsequent opening of the Trachea; with accompanying illustrations.* By JOHN WATSON, M. D., Surgeon to the New York Hospital.

MR. John Ames, of Easton, Massachusetts, aged 24, of tall and spare habit, previously in the enjoyment of moderate health, was seized in the latter part of October, 1843, with a cough, which lasted for a week or two, and left him, about the first of November, with marked difficulty of deglutition. Having always had what he called a narrow swallow, and being subject to frequent turns of choking, he did not at first pay much attention to the present difficulty. But it soon became more serious, obliging him frequently to leave the table while eating, and, at length, to eat by himself, and with the utmost caution.

He consulted a surgeon of Boston, sometime during November, who recommended the occasional introduction of a probang, the application of a blister to the throat, and daily inunction with hydriodate of potassa ointment around the neck. This course was followed for a few weeks, without relief. About the 1st of January, 1844, the difficulty had so far increased, that he was obliged to relinquish the use of solid food, and to subsist wholly on soft and fluid substances. He came to New York about the middle of January, and the surgeon whom he first consulted here, thought he was enabled to pass an ordinary urethral catheter below the seat of obstruction in the throat.

The patient came under my care on the 19th of January. At that date it was utterly impossible to pass an instrument of any size beyond the point of stricture. A gum-elastic catheter, introduced by the mouth, came in contact with the obstruction, at the distance of seven inches from the edge of the front teeth of the upper jaw. The patient was living entirely on fluids. He was free from cough, he had no pains of any sort, no soreness or tenderness about the throat either from pressure or from attempting to swallow. He was evidently emaciated and enfeebled; he had a frequent and copious flow of saliva and mucus from the mouth, probably in consequence of the obstruction to the passage of these fluids downwards. The thyroid bodies were larger than usual, and one or two lymphatic glandular swellings existed on either side of the throat, just below the angles of the jaw. The fauces were free from inflammation, the tonsils were not enlarged. The epiglottis could be fairly brought into view by depressing the tongue; but every thing about the fauces, within the range of vision or within the reach of the finger, was perfectly healthy. The patient had never before suffered from any severe illness. He was one of a numerous family, none of whom were subject to any serious disorder. He had, however, always been rather delicate. His mother had for years supposed he was of a scrofulous diathesis.

He had once had an obstinate sore on his chin, which gave rise to this opinion.

At my first visit, I put him on the use of hydriodate of potassa, grs. v. in solution, three times a day. I directed a blister to be applied on each side of the neck; and as he could swallow only fluids, advised a diet of milk. The blisters were kept open about ten days; and in the mean time I frequently attempted to get an œsophagus bougie beyond the stricture, introducing it sometimes through the mouth, sometimes through the nostrils; sometimes passing a large hollow instrument down to the obstruction, and leaving it there for an hour together; or passing a smaller instrument through the larger one; but all without success. At times the instrument appeared to clear the stricture and pass onwards; but, on withdrawing it, I invariably found that this apparent success depended on a doubling of the extremity of the bougie.

Failing with simple bougies and catheters, on the 27th of January I passed an armed bougie, through a hollow catheter, down to the stricture, and allowed a piece of lunar caustic, about the size of a pin's head, to melt at the seat of obstruction. This caused some soreness, but did no good. The caustic application was repeated on the day following. It appeared rather to aggravate than to relieve the difficulty.

With a view to an operation for getting into the œsophagus, beyond the stricture, I now requested a consultation. The patient was accordingly seen, first, by Dr. Stevens, then by Drs. Rodgers, Hoffman and Post; all of whom expressed their conviction as to the necessity of the measure, the obstruction being now so great that the patient was unable to say whether any portion of his fluid food actually passed into the stomach or not.

On the 2d of February, wishing to delay the operation until the arrival of his friends from the country, he was obliged to resort to nutritive injections. For the ten succeeding days, these were statedly administered through a long gum-elastic tube passed into the colon. They consisted of beef tea, broth containing boiled flour, boiled starch and arrow-root, boiled eggs, and such other articles as could be administered. The injections had a marked effect in recruiting his strength and in assuaging the sense of hunger. They increased the volume of the pulse and the fulness of the capillary vessels. But at times they excited tormina; and, occasionally, they purged him, especially when they chanced to be too highly seasoned with salt.

Feb. 12th. The patient had all the morning been suffering from tormina; his pulse was feeble, ranging at 120; but he was otherwise in a favourable condition. I commenced the operation about one o'clock, P. M., assisted by Drs. Stevens, Rodgers, Hoffman, Post and Buck, in the presence of several of my own students, and a few of the friends of the patient. Having previously placed him on a cot near a window, with his back well supported by pillows, and his head thrown gently backwards, I commenced the first incision on the left side of the neck, midway between the os hyoides and

the upper border of the thyroid cartilage, just in front of the sterno-mastoid muscle; carrying it downwards parallel with the edge of this muscle to within an inch of the sterno-clavicular articulation; dividing, in this course, the skin, superficial fascia and platysma-myoides muscle. A second incision, of an inch in length, was made nearly parallel with the upper edge of the thyroid cartilage, terminating posteriorly at the upper extremity of the first, and extending to the same depth. After turning up the flap of integument at the angle of these cuts, a glandular tumour, about the size of a hazelnut, was exposed and removed from among the layers of the deep fascia. It was found to be very hard, and to contain yellowish concrete pus in its centre. The dissection was then continued through the deep fascia. The omo-hyoid muscle was exposed and divided; the superior thyroid artery was brought into view, secured by two ligatures and divided between these. The loose cellular tissue between the main cervical vessels and nerves on the one hand, and the trachea, &c., on the other, was next separated, mostly by the handle of the scalpel, until the lower part of the pharynx and a portion of the œsophagus were fairly exposed. This muscular structure was put upon the stretch at every attempt of the patient to swallow. The finger could now be passed between the œsophagus and the anterior face of the spinal column; and the pulsations of the right carotid could be seen and felt through this space, by slightly elevating and rotating the larynx and œsophagus. The edges of the wound were now well dilated by curved spatulas. I next attempted to seize and puncture the wall of the pharynx, about an inch below the corner of the thyroid cartilage; but, owing to the yielding nature of its muscular texture, I found great difficulty in doing this without endangering the important structures in the neighbourhood. In order to steady the parts, I was finally obliged to introduce a silver catheter through the mouth on towards the stricture, and to cut upon the point of this instrument. On opening the gullet, I found the seat of obstruction just below the incision, and within reach of the point of the finger. But in order to divide it without risking any injury to the ascending thryoid artery, I was obliged to reach it from without. For which purpose, and in order to give more room at the bottom of the wound, I divided the sterno-mastoid muscle transversely, and turned down the upper border of the thyroid gland. In this process the recurrent nerve was brought into view; and one of the branches of the superior thyroid artery, as it entered the gland, was divided, giving rise to the only hemorrhage worth speaking of during the operation. The vessel was soon secured; and, after much difficulty and delay, the division of the strictured portion of the œsophagus was finally effected by an incision through its walls of at least an inch and a half in length. The obstruction, so far as I could judge at the time, appeared to depend upon a simple induration and contraction not over five or six lines wide. The surface of the œsophagus within appeared to be smooth and of its natural colour. A full

sized stomach tube was now introduced through the wound; and a glass of wine, and afterwards a full meal of boiled arrow-root, were administered.

The patient bore the operation with uncommon fortitude. After its completion, he informed me that the pain of the incisions was trifling to that produced by the fingers and the curved spatulas used in dilating the wound. After a few moments repose, the transverse portion of the external wound was drawn together by a single suture; the rest of the wound was allowed to remain open. The stomach tube was not removed from the œsophagus; but its free extremity was secured to the side of the head, to prevent it from slipping inwards.

On the following day the patient was free from fever, his pulse was less frequent than on the morning of the operation; his voice was slightly altered by the pressure of the tube or the tumefaction caused by the operation; but he had no difficulty of breathing. The saliva was issuing freely through the wound. No serious symptoms followed the operation. The tube was not disturbed until the end of the sixth day. It was then withdrawn, and another introduced through the left nostril. After this the wound was dressed with adhesive straps and compress, so as to favour cicatrization.

The second tube, which was about an inch and an eighth in circumference, at first gave him some uneasiness, slightly affecting the left eye and causing some hemorrhage from the nose; but these unpleasant symptoms subsided in a few days, after which the patient began to improve rapidly. This second tube was worn twenty-five days. Towards the close of this period it became rather offensive, and produced an unpleasant taste in the mouth. It was removed on the 15th of March, and a fresh instrument of the same size immediately introduced. The wound in the neck had now contracted to a mere line, and the fistulous opening into the œsophagus would scarcely admit a probe. The patient, of late, had been walking about the house, and, with the exception of one or two turns of indigestion from overloading his stomach, he had not had a bad symptom. He has not, however, gained much flesh; he is rather feeble, and his pulse ranges at 100.

March 31*st*. For some days past he has complained of soreness in the throat; he has raised much phlegm, and occasionally small streaks of blood; his respiration is somewhat oppressed, particularly at night. About a week since he had a slight swelling on the right side of the neck, which subsided under the application of a tobacco poultice. The present difficulty has not yielded either to this or to the use of anodynes. I was obliged to remove the tube from the nostril. It had been worn, since the last insertion, just sixteen days, and nearly seven weeks altogether.

April 1*st*. The removal of the tube has not afforded much relief. The respiration is still embarrassed. He attempted to swallow some wine and water; but the effort brought on violent coughing, laboured breathing and other symptoms analogous to those of œdema of the glottis. The right side

of the neck was somewhat swollen. An enlarged lymphatic gland could be felt just below the angle of the jaw, connected with a line of induration, apparently from diseased lymphatics, extending from the jaw towards it. Pressure on this side of the neck gave him pain. An attempt was made to re-insert the tube. The effort produced the most violent spasm of the laryngeal muscles, and threatened suffocation. Unable, for the present, to restore the passage through the mouth or nostril, and unwilling to tear open the already cicatrized wound in the neck, I resorted, for a few days, again, to the nutritive injections; hoping, in the interval, that the disease in the larynx might be so far relieved as to allow the tube to pass beyond the fauces. To favour this, I had the neck penciled freely with concentrated tincture of iodine. I put the patient on anodyne inhalations and fumigations of stramonium and cinnabar, five grains of cinnabar to a pipeful of powdered stramonium leaves, to be smoked every four hours. After a day or two, the stramonium appearing to irritate the tongue, common tobacco was substituted for it.

April 7th. The respiration is much improved; the pulse at 88; the swelling on the right side of the neck has subsided; the integuments are sore from the action of the iodine. Since last report, there has been some slight inflammation about the fauces, which has been mitigated by holding ice in the mouth. This, as it melted, passed downwards without troubling him. He is apparently losing strength for want of food in the stomach, although he makes no complaint of hunger. Another attempt was made to insert the œsophagus tube. It passed beyond the larynx without difficulty, but was arrested somewhat lower down. I was now obliged to break open the recent cicatrix in the neck, with the point of a probe, near the centre of the original cut; and to pass a very small gum elastic catheter obliquely downwards, through the opening thus made, into the œsophagus. With my own mouth, by means of this small tube, I forced about a pint of prepared arrow root, with a small quantity of wine, into the patient's stomach. The tube was then withdrawn; and, without much effort, I immediately afterwards introduced, through the same opening, a gum elastic catheter, only one size smaller than the large tubes which he had previously worn. After having his stomach supplied with food, his strength returned to him almost miraculously. He at once got up, dressed himself and walked down stairs. In the evening I found him at the fireside, smoking his pipe of cinnabar and tobacco; his pulse fuller than before, and ranging at 100.

After this period, I had no difficulty in supplying the stomach with sufficient food. On one or two occasions there was slight obstruction to the introduction of the tube, owing, perhaps, to the position of the neck at the time; but this was readily overcome by a little careful manipulation. The tube was never afterwards allowed to rest in the wound, but was removed immediately after every meal, and introduced anew, either by the patient

himself or some of his friends, whenever he wished to supply the stomach with food.

April 10*th*. He is so far restored as to be able to walk out. On the following day he rode out as far as Bloomingdale, a distance of several miles, and conversed much with his brother, who accompanied him. This rather imprudent exposure reinduced the difficulty of breathing. On the following morning, (April 12th,) his respiration was unusually laboured; he complained of soreness on the right side of the neck opposite the larynx. The parts here were tumefied. A large blister was applied over the swelling. This drew well without relieving him. In the afternoon suffocation was imminent: his lips were purplish, his countenance anxious, his face was bathed in clammy perspiration. I directed fumigations of burning resin, and left him to prepare for opening his trachea. I saw him again soon afterwards with Dr. Buck. The inhalation of the fumes of the burning resin appeared to have produced a favourable effect. His lips were again of their natural colour; and though his respiration was noisy and laboured, he was evidently in much less immediate danger. He had of late been using anodynes at night. I now administered fifty drops of laudanum, and directed the blistered surface to be dressed with mercurial ointment.

April 18*th*. He is again walking about the house. His breathing has steadily improved. The cinnabar fumigations and mercurial inunction to the neck, which have been continued to the present date, have not affected his gums.

April 24*th*. He changed his residence, and rode without fatigue about two miles. On the second day afterwards he again complained of slight difficulty of breathing. Several lymphatic glands, behind the upper part of each mastoid muscle, were slightly enlarged. The inunction and fumigations were continued, and a tobacco poultice was again applied with apparent benefit. The profuse discharge of phlegm and saliva, which has existed since the first onset of disease, still continues.

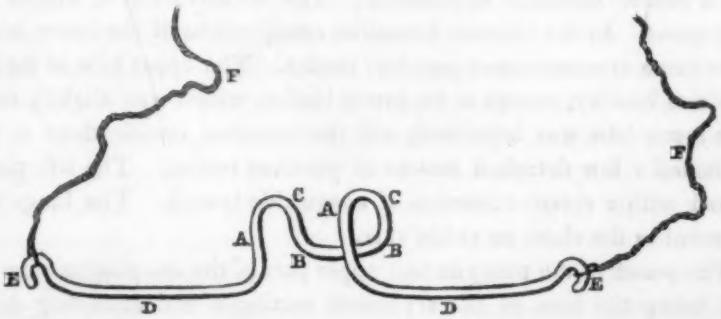
May 1*st*. Respiration is again impeded, and is nearly as difficult as on the 12th of April last. The right side of the neck is again swollen. A blister was applied on each side of the neck; absolute repose was enjoined; small doses of Dover's powder were frequently administered during the day, to act upon the skin; and a full anodyne was given at night. This course appeared again to check the threatened laryngeal obstruction. For a few days his breathing improved; but his strength had become much impaired.

May 8*th*. For the last thirty-six hours respiration has been much embarrassed. The introduction of the stomach-tube appears to-day, for the first time, to interfere with the breathing. With the assistance of Dr. Buck I opened the trachea. The operation consisted, first, in a longitudinal division of the integument and subjacent soft parts, including a section of the transverse portion of the thyroid bodies; secondly, in securing a few vessels and arresting all existing hemorrhage; finally, in dividing the cryco-thyroid

membrane transversely, and the crycoid cartilage longitudinally downwards through the median line, and continuing the incision through one or two of the upper rings of the trachea. The patient bore the operation well; and after the silver respirator was placed in the wound, he breathed through the instrument with perfect freedom. On the following day it was found necessary several times to remove the canula, to rid it of inspissated mucus, and at length to lay it aside, and to keep the sides of the wound expanded by two blunt hooks. For these, on the 10th, I substituted a couple of deep stitches with strong silk ligatures, one on each side; the outer ends of the ligatures being secured laterally to the sides of a circular wire about three inches in diameter, in such a way as to expand the wound and secure the wire permanently in front of the neck, as in the accompanying diagram. During the following night, notwithstanding this contrivance, the respiration became again obstructed by the accumulation of mucus, and by the overlapping of the lower part of the sides of the wound. The insertion of the canula was out of the question. I therefore substituted an extemporaneous dilator of bent wire, which I found to answer the purpose of keeping the wound well dilated, and of preventing the posterior face of the trachea from approximating the anterior. The accompanying figure* will give a sufficiently exact idea of the shape, and of the mode of applying this instrument, which was secured round the neck by a string.

Fig. I.

Fig. II.



* The foregoing figure represents a bent wire with a string attached to each extremity. The central curved portion being the part of the instrument for dilating the wound and expanding the trachea. The strings are used for securing the instrument in place, by tying them around the neck.

AA. The two sides that serve to expand the edges of the cut.

BC—BC. The portions of the wire that rest upon the posterior face of the trachea, and prevent it from falling forwards.

DD. The horizontal shafts of the wire passing laterally, and terminating in the loops EE, to which are attached the strings FF, for securing the instrument. These horizontal shafts may be much longer in proportion than they are here represented.

May 11*th*. The patient had passed a restless night. The lungs are apparently much congested. The patient requires to be continually fanned and to have the windows open. He is under the influence of a large anodyne, which was administered late last evening. His skin is cold, his lips pale and dry; his finger-nails and the lobes of the ears are of a purplish hue. These symptoms were relieved by resorting to wine and administering a full meal of prepared arrow-root. After this period stimulants and food in a fluid form were administered as freely as he could bear them, apparently with good effect. During the night of May 12th, he rested tolerably well; but early on the following morning, he had again sudden symptoms of collapse, in part owing to the influence of the anodyne taken on the previous evening. He was again relieved by stimulants. During the 13th he complained, for the first time, of pain in his left side. He had some cough; and the bronchial accumulations still continued to trouble him. During the evening his respiration was again easy; but in the course of the night a colliquative diarrhœa ensued. This reduced him rapidly. He expired early on the morning of the 14th of May, six days after the opening of the trachea.

The body was examined eight hours after death. The abdominal viscera were healthy. The right cavities of the heart contained a large fibrinous concretion. The lungs were unusually large and free from all traces of tubercles. The upper lobe of the right lung was healthy. A small portion of the lower and back part of the middle lobe and the greater part of the lower lobe were in a state of red hepatization. The bronchial tubes throughout this lung were of a deep red colour, and their mucous surface had a coarse muscular appearance. The accumulation of mucus was not very great. In the ultimate bronchial ramifications of the lower lobe, there were some appearances of purulent matter. The upper lobe of the left lung was also healthy, except at its lower border, which was slightly indurated. The lower lobe was hepatized, and the bronchial ramifications in this lobe contained a few detached masses of purulent matter. The left pleura was coated with a recent exudation of coagulable lymph. The lungs were not adherent to the chest on either side.

The pouch of the pharynx and upper part of the œsophagus, commencing just below the base of the arytænoid cartilages and extending downward about four inches, were extensively ulcerated. The whole surface of the ulcer was irregular and of a greenish colour; its upper and lower edges were ragged and irregular. It was nearly encircled by a series of tubercular deposits of a pale, yellowish white colour, somewhat detached from one another, and of sizes varying from that of a pea to that of a small nutmeg. Their primitive seat was evidently the submucous cellular tissue. Some of them had broken down in the centre so as to admit a probe to pass through them and under the tissues, among which they were situated. The mucous membrane, over a great part of the ulcer, was wanting, or hung in shreds, or

FIG. 1.

Fig. 1 represents the interior of the pharynx and œsophagus laid open from behind, exposing the ulcerated surface nearly surrounded by a series of tuberculous deposits. Some of these deposits have disintegrated or softened in the centre, so as to allow a bristle to pass through them and beneath the ulcerated mucous membrane surrounding them. The two bristles in the centre of the figure are seen passing through the openings that communicate with the trachea. The bristle on the left passes into a large pouch or abscess that extended towards the left mastoid muscle. The piece of gum elastic catheter, seen just above this, is placed in the track of the artificial opening, which opening would have admitted an instrument three or four times as large as this. Above the upper range of tubercles, is seen a small portion of mucous membrane elevated and thrown forward so as to obstruct the view of the arytenoid cartilages.

FIG. 2.

Fig. 2 represents the trachea and larynx laid open in front. Two bristles are seen passing through the openings between the trachea and œsophagus. The trachea is inflamed throughout, and in a state of ulceration immediately around the site of the artificial opening that was made into it about a week before death: it was of a dark greenish colour. This colour was not that of gangrene, but was merely owing to decomposing purulent and other morbid secretions. The catheter is seen, as in figure first, passing through the artificial opening into the œsophagus. A portion of integument has been left around the external orifice of this opening.

was bridled and undermined. The septum between the gullet and trachea had suffered more than any other part. On the œsophageal surface it appeared to be perforated at three or four places, but on examining it in the tracheal aspect, only two complete perforations were detected. Both of these were like irregular longitudinal slits, a quarter of an inch or more in length, one just under the lower edge of the crycoid cartilage, the other nearly two inches farther down.

The arytænoid cartilages were pressed irregularly against each other, so as to contract the upper orifice of the larynx. The glottis was contracted and irregular, not so much from œdema, as from a contracted state and doubling forwards of the whole upper and posterior part of the larynx. The mucous membrane of the trachea, opposite the perforations and around the borders of the artificial opening, was highly inflamed and of a greenish black colour. In the lower part of the trachea, as far as the bronchial tubes, it was also inflamed, but much less so than at its upper portion.

The œsophagus immediately below the ulcer, and thence throughout its whole extent, was perfectly healthy. The artificial opening which had been made into it for supplying the patient with food, was situated about midway between the upper and lower boundaries of the ulcerated portion. The mucous membrane in the immediate neighbourhood of this opening was not so much diseased as in other parts. The orifice itself was large enough to have admitted a tube half an inch in diameter. About an inch below this, in the same side, there was an ulcerated perforation leading to a pouch, which was bounded by the inner and under part of the mastoid muscle, and was of the same dark greenish hue as the ulcerated portion of the œsophagus. Another pouch, communicating with the œsophagus, ran in, on the right side, between the middle and lower pharyngeal muscles. Its inner surface was of a light red colour, and it appeared to have been produced simply by serous and fibrinous effusions, without suppuration.

In the dissection, prior to exposing the œsophagus, an enlarged lymphatic gland, about the size of a nutmeg, was found lying on the right side of the neck in front of the mastoid muscle, and near the upper and posterior part of the larynx. It had all the characteristics of a similar tumour, removed from the opposite side of the neck during the first operation. The tissues on either side of the neck in the neighbourhood of the larynx and diseased portion of the œsophagus, were all somewhat consolidated by inflammatory adhesions. Contrary to my expectation, I found the left sterno-mastoid muscle, which had been divided transversely, so perfectly reunited that scarcely any traces of the incision were observable. A sort of cellulo-fibrous cicatrix was, on careful inspection, discovered along part of the transverse cut, but not throughout its whole extent. I may here remark that the patient, in consequence of the division of this muscle, at first found his neck weak and his head disposed to fall back in attempting to recline;

but this weakness was not of long continuance. There was never any torsion or lateral inclination of the neck in consequence of the division of the muscle.

It may here be asked, were there no symptoms before death indicating the existence of the perforations between the trachea and œsophagus? The first appearance that led to a suspicion of the sort, was the passage of air into and out of the artificial opening in the neck, which was noticed for eight or ten days before the operation of tracheotomy. This appearance was not constant, but was observed for a few minutes after every removal of the œsophagus tube. The next circumstance, leading to the same suspicion, I noticed, for the first time, a day or two only before death. A few drops of prepared arrow-root, after I had administered a bowlful of this through the œsophagus tube, were seen within the trachea, immediately behind the opening made by the operation of tracheotomy.

The accompanying plates will probably convey a more accurate idea of the pathological condition of the upper part of the trachea and œsophagus, than can be given by mere verbal description.

The foregoing case, in reference as much to its pathological character as to the measures instituted for its relief, is one of unusual importance. The tubercular deposits in the submucous cellular tissue around the upper part of the œsophagus, were unquestionably the starting point of disorder. They probably existed there long before the first serious manifestations of disease, and may have given rise to the "narrow swallow" with which the patient had always been affected. The extension of irritation from these to the tissues in their neighbourhood, probably induced the cough which had troubled him for a few weeks prior to the first symptoms of stricture. But up to the period of opening into the œsophagus, the disease, I am disposed to believe, had not progressed to ulceration, at least to any extent; for when opened, so far as I could see, the inner surface of the œsophagus was smooth and of its natural colour. Above the opening the finger could detect some irregularity; but there had been no discharge of blood or of purulent matter from this surface. Below the cut the tissues were also smooth, though somewhat rigid and resisting to the first introduction of the tube. This rigidity was very circumscribed, easily overcome and never subsequently observed.

Whether the long continuance of the tube in the œsophagus had much to do in favouring the spread of ulceration or not, is difficult to determine. I am disposed to think it had no marked effect in this way. The ulcer did not extend beyond the range of the tubercular deposits, although the tube reached much farther down, and was as likely to affect the mucous membrane at its lower as at its upper portion. Be this as it may, I would not, in a similar case, recommend the constant continuance of the tube in the passage. The recorded cases of foreign bodies lodged in the œsophagus

clearly show that ulceration, leading to perforations, is readily excited in this organ. With the view of allowing the cut in the neck to close, if this were desirable, I would have the patient nourished by introducing the tube anew at every meal-time, and removing it immediately afterwards. And if this proceeding could not be effected through the mouth or nostril, I should, as in the latter period of the foregoing case, relinquish all attempts to close the wound in the neck, and introduce the tube through the artificial opening.

Permanent contractions of the œsophagus are usually looked upon as the result of carcinoma. This view of these disorders has, doubtless, had much influence, hitherto, in deterring surgeons from attempting any very efficient measures for overcoming them. The disease, in the present instance, was clearly not carcinomatous. The tubercular masses were imbedded in, and not gradually diffused among the surrounding tissues. They had no appearance of organization. Some of them had become softened or disintegrated in the centre. They had given rise, at no time, to lancinating pains. The surrounding parts had not the appearance of scirrhus; and no similar deposits were found in any other part of the body. Again, the patient had many of the marks of a strumous diathesis. These circumstances, taken in connection with the existence of concrete pus in the centre of the lymphatic gland on the side of the neck, can leave no reasonable doubt as to the scrofulous nature of the disorder. It is the second instance in which, I think, I have met with a scrofulous affection of the œsophagus. The first was in a lady. The disease, in her case, was seated just above the cardiac orifice of the stomach. It had progressed to ulceration and to the formation of a large abscess in the posterior mediastinal space, communicating with the ulcerated œsophagus, and was connected with tubercular deposits in the peritoneum and in other parts of the body. But, remarkably enough, in both of these instances, the lungs contained none of these substances. I have met with other cases of permanent contraction of the œsophagus not the result of carcinoma. One of these, a mild case, recently under my care in the hospital, was the result of a burn, caused some two years before admission, by attempting to swallow some sort of very hot food. The obstruction was nearly opposite the upper end of the sternum; but was not so severe as to absolutely prevent the passage of nutriment into the stomach. Another, and much more severe case, was caused by attempting to swallow what was supposed to be a solution of corrosive sublimate. This patient was admitted into the hospital, many years since, with a concomitant affection. For nearly a week after his admission and before the stricture was discovered, he had not swallowed a particle of food or drink. Luckily the stricture was capable of dilatation by means of a stomach tube. The patient soon learnt how to use this instrument of himself. He remained, after his recovery, for many years a labouring man about the hospital; and, during this period, he was frequently obliged to resort to the use of his tube, which he kept always at hand.

The ultimately fatal result, in the case of Mr. Ames, though brought

about indirectly by the disease of the œsophagus, should offer no objection to a repetition of the operation of œsophagotomy under similar circumstances. The patient's life was considerably prolonged by it. The supervention of disease in the bronchial passages, which was the immediate cause of death, should, as it appears to me, be looked upon as incidental, and not as a necessary consequence of the primary affection. And had this secondary affection not occurred, there is no reason to doubt that, so far as nutrition and digestion were involved, the patient's life would have been preserved. The opening of the trachea, called for towards the close of the case, was the means of prolonging life only for a few days.

In reference to the instruments employed for dilating the wound in the trachea, I am disposed to believe that the wire dilator, above delineated, or even the ring and lateral ligatures, may occasionally be found, as in this case, more convenient and useful than the canula of Casserius. On a former occasion I succeeded remarkably well in temporarily dilating the wound, by passing the lateral ligatures through the barrel of a quill, placed transversely across the neck, and tying their extremities together over this instrument. Any hollow tube, or a thin piece of wood, notched at either end and about three inches long, would answer a similar purpose.

Many systematic and other surgical writers, since the commencement of the last century, have spoken of œsophagotomy as a feasible operation. But the instances hitherto published, or in which it is said to have been performed on the living subject, amount, at most, to only five. The first two of these, stated to have occurred more than a century ago, are, to say the least, of questionable authenticity; and all of them were for the removal of foreign bodies. The present, so far as I can discover, is the only instance in which this operation has been performed for supplying the stomach with food.

The older surgeons were so apprehensive of danger, in attempting to reach the œsophagus by an incision, that in cases calling for this, they contented themselves with the use of probangs, flexible bougies, metallic sounds, blunt hooks, forceps and other similar instruments; or, as a last expedient, where the foreign body in the gullet impeded respiration, they first opened the trachea, and afterwards attempted to disembarrass the œsophagus with the probang; or, failing in this, they allowed the foreign body to work its way outward, as it might, by ulceration. Nicholas Habicot, a surgeon of Hôtel Dieu, about the beginning of the seventeenth century, was the first to open the trachea for this purpose. A youth about fourteen years of age was brought to him, who, in dread of being attacked by robbers, had swallowed nine gold pistoles enveloped in a piece of cloth. This package had lodged in the œsophagus, and was threatening suffocation by its pressure against the trachea. Habicot at once relieved the breathing, by opening the trachea and inserting a canula, and afterwards pushed the money onward into the stomach by means of a long leaden sound.*

* Sprengel, tome 7, p. 142. Hevin, in Mémoires de l'Acad. de Chirurg. tom. 1re. Habi-

Jean-Baptiste Verduc, a surgeon of Paris, about a century after Habicot, was the first to suggest the operation of opening into the œsophagus. If the foreign body, says he, cannot be otherwise dislodged, and the patient is in danger of suffocation, I am disposed to think that pharyngotomy might be attempted. For this we should proceed as for bronchotomy. The bronchial muscles should be separated in order to reach the œsophagus in the most direct manner; and this passage should afterwards be opened longitudinally over the situation of the foreign body. M. Hevin,* from whom I have borrowed this passage, has taken much trouble to enforce the suggestion of Verduc. But Guattani, a surgeon of Rome, about the middle of the last century, proceeded a step farther.†

A drunken fellow tossing up a chestnut, to catch it in his mouth as it fell, unluckily allowed it to slip directly into the œsophagus, and could not afterwards dislodge it. In an hour or two after the accident, finding himself unable to swallow, he applied for relief at the hospital to which Guattani was attached. The patient being intoxicated, and having, as yet, no difficulty of breathing, some doubt was at first expressed as to the existence of the nut in the gullet, especially as it could not be felt externally. The case soon took a serious turn. The introduction of any instrument into the throat was found to be extremely difficult, in consequence of the convulsive action of the muscles of the lower jaw. Symptoms analogous to those of delirium tremens ensued, accompanied with heat in the throat, and inability to swallow. For some days the patient was supported solely by nutritive injections. On the sixth day, notwithstanding several previous venesections, he was seized with severe epistaxis; and this recurred several times afterwards. On the eighth day his respiration became embarrassed. On the tenth he was able to swallow; and a singular sort of noise was produced by deglutition. He died on the nineteenth day. The œsophagus was found firmly contracted immediately above and below the nut. This had partially escaped from the passage into an ulcerated opening, and lay just outside and to the left of the trachea. The membranous portion of the trachea was sphacelated, and perforated by an opening large enough to admit a small bean; and by means of this opening a free communication had been established between the trachea and œsophagus.

This unfortunate case appears to have led Guattani to inquire into the measures best calculated to avert a similar catastrophe. He examined into the anatomical relations of the gullet; operated several times on the dead

cot's work, from which these authors quote, is entitled "Question Chirurgicale sur l'Opération de la Bronchotomie," printed in 4to. at Paris, 1620. He died in 1624.

* Précis d'Observations sur les corps étrangeres arrêtés dans l'Œsophage. Par M. Hevin, in the first volume of the Mémoires de l'Acad. de Chirurg. J. B. Verduc's Traité des Opérations de Chirurgie, was published at Paris in 1701.

† Mém. de l'Acad. de Chirurg. 8vo. Paris, 1819, tome 3, p. 343.

body, and on numerous living animals; and, finally, demonstrated to some of the surgeons of Paris a mode of opening into the œsophagus which, if not the most approved, was, at the time, sufficient to establish the practicability of the operation. His method, essentially the same as that formerly suggested by Verdue, has never been carried into effect on the living body. He reaches the œsophagus on the left side of the neck, by a wound passing between the sterno-hyoid and sterno-thyroid muscles on the one hand, and the trachea on the other.

In the third volume of the *Mémoires de l'Académie Royale de Chirurgie*, containing his essay on this subject, I find a brief notice of two cases, in which œsophagotomy is said to have been actually performed. These cases are not detailed, nor were they noticed on the authority of the operators. The first occurred as early as 1738, some twenty years before its announcement, in the practice of M. Goursauld, a provincial surgeon; and the second in that of M. Rowland, a surgeon of the French army. Long before this period, operations had been performed for extracting needles, and even fragments of bone that had escaped from the gullet into abscesses or adventitious openings, so as to be readily detected beneath the integuments on the side of the neck. Several such cases are in fact referred to by M. Hevin. But the procedure for the removal of substances thus situated, is of much less serious moment than the operation of œsophagotomy. Subsequent to the time of Guattani, several new suggestions were offered, and instruments devised by Vacca and others for rendering the operation in question less formidable. Baron Larrey,* on one occasion, succeeded in removing the fragment of a bayonet which had long remained concealed behind the fauces, by puncturing the posterior pillar of the fauces with what he calls a pharyngotome, and afterwards withdrawing the foreign body, by means of a forceps, through the mouth. But the operation of œsophagotomy appears never to have been fairly attempted, prior to its successful performance by M. L. J. Begin, Surgeon Major to the Military Hospital of Val-de-Grâce, on the 15th of January, 1832.

A soldier, 24 years of age and in good health, while eating soup on the 4th of January, 1832, allowed a small fragment of bone to enter the œsophagus, and, being unable to rid himself of it, he applied at once to his regimental surgeon for relief. Several ineffectual efforts were made both before and after the man entered the hospital, to remove the bone from the part. On the 8th of January he was seen for the first time by M. Begin. The patient experienced much pain in deglutition, accompanied with a sense of tension in the neck. His respiration was embarrassed, at times so much so as to threaten suffocation. The left side of the neck was tumefied. He could not open his mouth freely, nor throw his head backwards suffi-

* Clinique Chirurgicale, tome 2, p. 133.

ciently to admit of full exploration of the fauces. He had a copious flow of mucus and saliva from the mouth. The bone could be detected by introducing a gum-elastic sound to the distance of seven or eight inches, but could not be moved, either upwards or downwards, by any instrument introduced into the fauces. Deglutition, however, was not absolutely interrupted. Having in vain essayed the use of probangs, curved forceps and blunt hooks of flexible metal; palliating the symptoms, in the mean while, as much as possible by leeches, mucilaginous drinks and other similar measures; and fearing that, if allowed to remain, the foreign substance might perforate the trachea, or pass laterally into some of the great vessels of the neck; M. Begin, on the 15th of January, twelve days after the accident, resolved upon the operation of œsophagotomy.

With his face toward the patient's left side, he commenced his incision a finger's breadth above the sterno-clavicular articulation, and carried it parallel to the trachea along the left side of the neck, in front of the sterno-mastoid muscle, as far up as the thyro-hyoidean space; through skin, superficial fascia, platysma-myoides and deep fascia, into the cellular space between the trachea and œsophagus on the one side and the great vessels and nerves on the other; dividing, as he progressed, the omo-hyoid muscle, and placing a ligature on the superior thyroid artery, or one of its branches, which had been divided. These incisions brought him to a large sloughy abscess, which he found communicating with the œsophagus. The foreign body was discovered somewhat further down, in the portion of the œsophagus corresponding with the middle of the first bone of the sternum. After much difficulty it was dislodged and removed by the aid of a blunt hook. For some time afterwards food was administered by the occasional introduction of the stomach-tube. On the 20th of February the wound in the neck had cicatrized. The patient was afterwards exhibited, perfectly cured, to the Royal Academy of Medicine.

Remarkably enough, before this patient had left the hospital, another was admitted almost precisely similar. This second patient, also a soldier, aged 28, in eating soup, on the 13th of February, swallowed a fragment of bone which lodged in the œsophagus. The symptoms were not quite so grave as in the first case; but the foreign body was quite as firmly impacted in this part, and could neither be depressed nor removed by any sort of instrument, through the mouth. Deglutition and respiration became seriously involved; and, on the 19th, M. Begin was obliged to open the œsophagus. On exposing this, an unnatural prominence, caused by an angular projection of the bone against its coats, could be felt at the bottom of the wound just above the level of the sternum, but too low to be reached by an incision upon it without endangering the inferior thyroid artery. The œsophagus was opened at some distance above the projection. The forceps was afterwards introduced, and the foreign substance was thus removed without difficulty. Symptoms somewhat serious followed the operation.

On the fourth day, after an attack of coughing, the patient discharged a great quantity of pus through the wound. The flow continued for at least twenty-four hours; and, after this discharge, the patient began to recover. Before the wound had cicatrized, another abscess formed beyond the sterno-mastoid muscle just above the clavicle. This was opened on the 26th of March. The patient left the hospital perfectly well on the 9th of April following.*

The third and only other instance in which this operation has been performed for the removal of foreign substances, is recorded by Mr. James M. Arnott, surgeon to the Middlesex Hospital, London, in the 18th volume of the Medico-Chirurgical Transactions. The patient was a child only two years and a quarter old. The offending body, as in the two former cases, was a piece of bone. The operation was performed on the 21st of January, 1833, four weeks after the accident, and not until the respiratory organs had become seriously involved. The child bore the operation well; but the case resulted fatally, fifty-six hours afterwards, from inflammation of the lungs.

The case which I have reported, then, should be looked upon as the fourth authentic instance in which œsophagotomy has been performed on the living subject; and as the only one in which it has been employed for the relief of stricture.

The operative procedures of M. Begin, Mr. Arnott and myself, although essentially alike, differ in some important points from one another. The first of these surgeons, operating on the left side of the neck, carries his incisions from below upward. If the foreign body within the œsophagus causes any projection, and is within reach, he cuts directly upon it. "But in a different case," says he, "the bistoury should be boldly plunged into the œsophagus parallel to its axis, at the middle of the wound, so as to lay it open to the extent of half an inch.† The incisions from below upward will enable the operator to use his left hand for dilating the wound and protecting the vessels and nerves on the side of the neck. These objects, however, can be quite as well effected by a curved spatula in the hands of an assistant. But as to plunging the bistoury boldly into the œsophagus, I must seriously protest against it. The yielding nature of this organ, even when its muscular fibres are put upon the stretch in deglutition, renders any attempt to incise it extremely difficult. It is readily fixed by passing a silver catheter or a firm gum-elastic tube into it. But a bold stroke of the knife, by transfixing the œsophagus, might readily endan-

* Journal Universel et Hebdomadaire, vol. ii., April, 1833.

† Dictionnaire de Méd. et de Chirurg. Pract. Article, Œsophagotomie, vol. 12, p. 153:—"Si le corps étranger fesait une saillie appréciable sur quelque point, il faudrait inciser immédiatement sur lui. Dans le cas contraire, le bistouri doit être hardiment plongé dans l'œsophage," &c.

ger the recurrent nerve or the large blood-vessels on the opposite side of the neck; or, passing obliquely forward, might perforate the trachea.

Mr. Arnott performed his operation on the right side of the neck. His incisions extending from the upper part of the thyroid cartilage about an inch and three-quarters in length, were made in other respects as in the operation of M. Begin, until they reached the outer edge of the sterno-thyroid muscle. The further separation of parts was effected either with the fingers or with the handle of the scalpel. A male silver catheter was then introduced by the mouth, and its point made to project, carrying the dilated gullet upon it. Into this he next made a small opening, through which he introduced the polypus forceps for seizing and removing the foreign substance. The pharynx at any part above the lower border of the cricoid cartilage, is quite as accessible on the right as on the left side. But immediately below this point the œsophagus begins to shift slightly from the median line, and inclines towards the left during the rest of its course along the neck. The selection of the right side as the field of the operation, except when the foreign body is found projecting on this side, appears, then, to be objectionable, especially where the œsophagus has to be opened low down.

I need not again repeat the steps of my own operative procedure, further than to state that it differed from both of the foregoing; first, in requiring a transverse as well as longitudinal incision of the integuments, partly for securing small vessels, but principally for exposing the diseased lymphatic gland that lay in the track of the dissection; and secondly, at the close of the operation, in requiring the thyroid gland to be partly detached, and the sterno-mastoid muscle to be divided transversely in order to expose the œsophagus at the lower part of the wound, and to gain sufficient room for securing the inferior thyroid artery in case it had been injured.

Notwithstanding Mr. Arnott's remark that œsophagotomy is a less formidable operation than is usually supposed, it is one that should never be undertaken without a full and deliberate view of its attendant difficulties. The chance of wounding the great vessels and nerves on the side of the neck is comparatively small, as these are readily drawn aside. The recurrent nerve, if brought into view at all, is easily avoided by approaching the œsophagus on its outer side somewhat toward its posterior aspect. A hasty stroke of the knife, at this stage of the operation, might endanger the recurrent nerve, the blood-vessels or other parts on the opposite side of the neck. If the incisions are rather too high up, the bistoury may wander into the cellular tissue between the different layers of the pharyngeal muscles. The superior laryngeal nerve, and occasionally some deep veins passing towards the internal jugular, will be endangered when the incisions through the layers of deep fascia are carried above the level of the thyroid cartilage. The superior thyroid artery, or its branches, appears to have been divided in every case hitherto mentioned, and to have been readily secured without

leading to any alarming hemorrhage. The surgeon, however, cannot be too cautious in approaching the inferior thyroid, which, from its depth, size and source, might prove externally troublesome if divided. In no instance, as yet, has it been injured; although in my own, as well as in some of the other operations, it must have been closely approximated.

Having now spoken of œsophagotomy as a mode of relieving such strictures as are within the reach of an incision on the side of the neck, another question naturally arises:—what measures should be adopted for the relief of strictures of the œsophagus so situated as to be inaccessible in this way?

This question, of course, applies only to such organic obstructions of this organ as are irremediable by bougies and other means of mechanical dilatation, and so severe as to threaten total and immediate obliteration of the passage. Time may be gained and the patient's life prolonged for weeks, in such cases, by the use of nutritive injections. But the most that can be expected from these, where any hope remains of preserving the patient's life, is a temporary respite from more efficient measures.

Organic strictures may occur at any point in the course of the œsophagus; but the most frequent seat of deep strictures is at its transit through the diaphragm, or just above its termination. I had occasion, about three years since, to prescribe for a gentleman from New Jersey with a stricture thus situated. For some months he subsisted wholly on fluids; and these he swallowed with the utmost difficulty. He finally died of inanition. The disease, in this case, was probably scirrhous. But disorders of a different character, leading to the same result, may attack this part; as in the case of a lady with a tubercular affection, to which I have already alluded; in cases resulting from chemical or mechanical injuries, and in certain malformations of the œsophagus interfering with deglutition, and yet, possibly, not beyond the reach of art. An instance of the latter sort was reported by M. Martin, of Aubagne, to the Medical Society of Marseilles: The infant refused all nourishment, or this, when forced down, was immediately rejected. The child lived only thirty-six hours. The œsophagus terminated in a cul-de-sac, just below the pharynx, and the stomach communicated by a canal, of the calibre of a small quill, with the trachea near its bifurcation.*

Incised and even gun-shot wounds have often penetrated the stomach without resulting fatally. Injuries of this sort are, unquestionably, among the severest and most alarming; but their proportion of deaths to recoveries is perhaps fully estimated by Percy, who calculates that out of twenty cases only four recover. Ettmuller† and Hevin have recorded cases, and

* New York Medical Repository, vol. xxii. p. 244.

† Acta Physico-Medica. Obs. LII. vol. iii, p. 168. In this paper Ettmuller refers to the following authors as furnishing confirmation of the curability of wounds of the stomach, viz.:

Galen, Albucasis, Julius Alexandrinus, Fallopius, Job. Matthæus, Jo. Schenck, Dan. Becker, Diembrock, Menzel, Blegny, Wolff and Cowper. To this list, Hevin adds three

furnished us with numerous references to recoveries after such injuries, recorded among the writings of the older authors since the days of Galen. But Plouquet, according to Hennen, has exceeded all others in the vast number of cases he has amassed. Hennen himself* refers to two successful cases in the practice of Dr. Thompson, after the battle of Waterloo, to another in the Philosophical Transactions, and to others in the writings of Kluyskens, Schlichting and Percy; and Permannus is said to have often stitched the stomach in his practice with the army. The following instance I have condensed from the original report of it, in the New York Medical Repository, vol. xv. p. 215:

In the month of June, 1784, three men undertook to secure a runaway negro, who was armed with a large knife. The negro, in defending himself, gave one of them a back-stroke with the instrument, which entered near the cartilages of the false ribs on the right side, penetrated into the stomach and passed nearly transversely the cartilages on the other side. The wound was about two inches below the ensiform cartilage and nearly three inches long externally. The stomach was opened by a wound of more than two inches long. The dinner, which the man had taken just before the accident, consisting of bacon, cabbage and cider, was partially discharged through the cut, and part of it escaped into the peritoneal cavity. The wound was sewn up by an old soldier with an awl, needle, and thread. The patient was seen, for the first time, by Dr. Archer, of Maryland, (who has recorded the case,) some forty-eight hours after the accident. The stitches being only through the skin, were then removed. The patient was kept on his back, and nourished with strained soups; the wound was kept clean, and dressed twice a day. At the doctor's second visit, on the ninth day, it looked well, and the patient was free from fever. He complained of soreness at the right groin, which was swollen, hard and inflamed. A poultice was applied and continued until suppuration occurred. The swelling at the groin was then opened, and a large quantity of pus, mixed with pieces of cabbage, was evacuated. The patient suffered more from this abscess than from the wound in the stomach. After the matter was discharged both wounds healed up. Dr. Archer often saw the man after his recovery. The only permanent inconvenience resulting from the accident was a hernial protrusion of the stomach, about the size of a goose-egg, which would appear after eating or drinking, and recede when the stomach was empty.

Having now shown that wounds of the stomach are far from being necessarily fatal, we may next proceed to show that openings, whether the

cases on his own authority from the records of the academy, and further references to others in the writings of Christoph. a Vega, Matth. Carnax, Bern. Sucvus, Sennertus, Bohnius, Jacob Oetheus, J. F. Hildesius, Selveltetus, Wolsius, Felix Platerus, Le Dian, and to others in the Ephemerides, Dec. 2, Ann. 1; and Dec. 1, Ann. 10, &c.

* Principles of Military Surgery, Philadelph. 1830, p. 346.

result of injury or occurring spontaneously, may give rise to permanent fistulous communications between the stomach and external surface of the abdomen, and that such fistulæ may exist for years without interfering with digestion or impairing the general health. A most remarkable example of this sort was published in 1803, by Dr. Jacob Helm, of Vienna, an abstract of which may be found in the 12th vol. of the N. Y. Med. Repository. The following is the case still more abbreviated:

Theresa Petz, of Breitenwaida, a village seven miles from Vienna, the wife of a blacksmith and mother of seven children, had, for many years, suffered from an obscure and painful affection of her stomach. A tumour, not larger than a hazelnut, appeared, in 1790, over the region of the stomach and slowly increased until 1796, when it extended to the navel. In April, 1797, it suppurated, broke, and gave issue to a pint of thin, yellowish matter. The dropsical swellings and occasionally agonizing pains, which she had long endured, entirely disappeared within a fortnight afterwards; and for many years subsequently she continued in good health. The opening into the stomach was at first small, but readily gave issue to particles of food. In the July following its first occurrence, it was large enough to admit the finger; it afterwards acquired an extent of two inches in diameter. A catheter was often introduced into the upper and lower orifices of the stomach without exciting pain, vomiting or any other unpleasant symptom. She sometimes washed out the stomach with milk and water, and occasionally she relieved herself of an over-amount of food by removing it from the stomach through the opening. After the washing with milk and water, she was usually obliged to take food for relieving a sense of distress and uneasiness. When she was riding in a wagon, or subjected to any considerable motion, the bile would rise into her stomach and issue from the opening. She attended to all her domestic affairs, and was usually in good spirits. In 1800 she was able to attend to field-labour, and to walk to Vienna to show herself to physicians and other curious persons.

Ettmuller, in the Acta Physico-Medica Academiæ Cæsarea Naturæ Curiosorum, (vol. iii. p. 170,) published at Nuremberg, for the year 1733, gives an instance somewhat similar: A single woman, aged thirty, the housekeeper of a very celebrated man, consulted me last year, says he, in reference to a hole about the size of a large pea in her left hypochondriac region, surrounded by inflamed and indurated integument, and giving issue to portions of her food and drink. She referred this indirectly to a fall against the top of a post, which happened to her when she was only ten years old. After the injury, an indolent swelling appeared over the stomach, which eventuated in the fistulous opening. Her exercise and active habits appeared to prevent this from closing. On changing her mode of life and confining herself for a few weeks to bed, the fistula contracted, and she is now, says the report, getting on prosperously.

M. Richerand gives another case. This patient was also a female, aged forty-seven. The opening, as in the foregoing instance, had resulted from an indolent swelling, caused by a local injury many years before its breaking. The fistula was seated at the upper and left portion of the epigastrium. It was of an oval form, eighteen lines long by rather more than an inch wide, allowing the inner surface of the stomach to be seen through it. She became a patient at La Charité, under the care of M. Corvisart. At this period her appetite was equal to that of three ordinary women of her age. The fistula had existed about nine years. Three or four hours after eating she was usually obliged, from a sense of uneasiness, to remove the compresses with which she covered the fistula, to give issue to the contents of the stomach. After this escape of food, which was discharged with a considerable quantity of gas, she was accustomed to wash out the stomach with an infusion of chamomile. This quieted her, and enabled her to sleep. Her bowels were habitually constipated; her urine was small in quantity; her pulse was weak and rarely over forty-six beats in a minute: she was feeble and emaciated, probably from want of nourishment; only a small portion of the food which she took passed beyond the pylorus. She died of a colliquative diarrhœa six months after her admission into the hospital. The stomach was found intimately united to the abdominal parietes. The opening into it was at the union of the two left thirds with the right third; or about eight fingers' breadth from its great extremity, involving only the pyloric portion. No other organic lesion was discovered.*

A case more remarkable than either of the foregoing is the well-known instance of the Canadian, Alexis H. Martin, recorded by Dr. Beaumont, of the United States Army. The fistula in this case resulted from a gunshot wound. He lived for many years after its occurrence in the employ of Dr. B., who was in the habit of frequently inspecting the stomach, and making all sorts of experiments upon its inner surface through this opening, preparatory to the publication of his work on digestion.†

Mr. Hennen refers to a case of Ettmuller's in the fifth volume of Haller's "Dissertationes Chirurgicæ," probably the same which I have quoted above, in which the fistula remained open ten years; and Wenker, in the same volume, says he, relates another in which a wound of the stomach continued open for twenty-seven years.

But the remarkable cases to which we have just referred, much as they might warrant the propriety of establishing an artificial opening into the stomach, as a last resort in some severe cases of strictured œsophagus, are, after all, not so much in point as others that yet remain to be noticed. For if the early records of surgery are worthy of confidence, this formidable

* Physiologie. Paris, 1833. Tom. I. p. 282.

† Experiments and Observations on the Gastric Juice and the Physiology of Digestion. By Wm. Beaumont, M. D., Plattsburgh, 1833.

operation has actually been performed, on three several occasions, for the removal of sharp instruments from the stomach. These cases are related in the German Ephemerides, and quoted by M. Hevin in his essay above referred to, from which I have made the following abstract.

A young Prussian peasant, feeling some uneasiness in the stomach, attempted to excite vomiting by introducing a knife with the shaft downward into his throat. The instrument slipped from his fingers and fell into the œsophagus. He attempted to dislodge it by placing himself head-downwards, but failing in this, he finally washed the instrument into his stomach with a draught of beer. The surgeons of Kœnigsberg, whom he consulted, advised him, in view of the dangers to which he was now exposed, to have the knife removed by an incision; and Daniel Schwaben, a lithotomist, was selected as the operator. About a month and a half after the accident, having already been prepared for the operation by a gentle purge, and by oleaginous and balsamic medicines, the patient was tied to a plank, and the course of the proposed incision was marked with pen and ink over the left hypochondrium. The external incision was made longitudinally, to the extent of two inches. The stomach being empty at the time, did not present at the wound, and the surgeon was obliged to seize and draw it outward by means of a curved needle. The projecting point of the knife was easily recognized through the coats of the stomach. An incision was made into the organ immediately over the instrument, through which it was promptly extracted and found to be about ten inches long. The edges of the wound in the stomach required no sutures. The incision of the integuments was drawn together by five peg sutures (*chevilles ou agrafes*). No serious symptoms ensued, and the patient soon got well. The knife and a portrait of the young peasant himself, says the report, are both preserved in the electoral library at Kœnigsberg.

The German jugglers of former days must have had strong stomachs, and been more matter-of-fact sort of people than some of their sublimated descendants. Infinitesimal potions of silex and microscopic globules of sulphur they would have scorned, at the sight of a tasty jack-knife. A young fellow of Sprague, out of mere sport, says Crollius, swallowed a knife nine inches long, the point of which presented a little above the fundus of the stomach, towards its left side; and the handle, towards the spine. Two months afterwards, it was successfully extracted from the stomach by Florian Mathis, first surgeon to the emperor.

Again.—A Prussian woman had the misfortune to swallow a knife seven inches long, which she had introduced into the throat to excite vomiting. At first it stuck in the œsophagus, but afterwards gradually descended into the stomach, where it remained three days without causing any pain. She afterwards felt pricking sensations, and very soon the point of the knife could be felt in the left side. The pains increasing forced her to seek advice. Dr. Hubner, of Rastembourg, to whom she applied, made an incision over

the point of the knife in the left hypochondrium, on the eleventh day of the accident. He found that the blade had already pierced through the stomach, and had excited slight suppuration around it. The knife was withdrawn with a pair of forceps. Her cure was afterwards very prompt.

It would take us too far out of our way to refer to instances of foreign bodies successfully removed from other portions of the alimentary canal.* Enough, I presume, has been advanced to show that, under pressing circumstances, and as an extreme measure, the operation of opening into the stomach, for the purpose of supplying it with food, is sufficiently warrantable, and that, under some circumstances, it may be the means of preserving or prolonging life.

The anatomical or surgical knowledge requisite for performing it with safety, so far as the process itself is concerned, is immeasurably less than is called for in numerous comparatively trifling operations. Its immediate danger is from hemorrhage; its more remote, from peritonitis; and its ultimate, from impaired action of the stomach. The loss of blood is not likely to be severe, except from penetrating into the stomach near its upper or lower curvature in the situation of its greater blood-vessels. Peritonitis may possibly be avoided by preventing the escape of blood, or of any of the contents of the stomach into the peritoneal cavity, as well during as after the operation; by avoiding any injury to the omentum, and all undue manipulation with the serous surfaces; or it may be controlled by depletion, anodynes and other measures employed for the treatment of ordinary peritoneal inflammation. The stomach being necessarily empty under the circumstances, calling for the measure in question, the lower edge of the liver, or the colon distended with gas, might interfere with our attempt to bring it into view. But these organs can be readily avoided, or pushed aside. The case quoted from M. Richerand would seem to show, that the functions of the stomach would be most impaired where the opening had been made into its pyloric portion. Other cases would lead us to infer that serious nervous symptoms, at the time of the wound, would be most frequent when the opening was effected near the cardiac orifice. The place of election, then, for opening the stomach, would be at equi-distance from its two extremities, and midway between its two curvatures, at its anterior prominence.

New York, *July*, 1844.

* Some of these are referred to by Mr. Hevin. But perhaps the most interesting fact of the sort on record is given by Dr. White, senior, of Hudson, N. Y. Dr. W., August 7th, 1806, removed, by incision, and with complete success, a silver teaspoon from the small intestine of a person who had swallowed it, in a fit of delirium, about a month previous. For a full report of the case see N. Y. Med. Repos., vol. x. p. 367.

ART. III.—*Osteo-Sarcoma.* By CHARLES BELL GIBSON, M. D., Professor of Anatomy in Washington University of Baltimore.

Hagar Jennings, coloured, from Anne Arundel county, aged 35 years, was brought to my office on the 5th of June by Dr. Richard H. Thomas, of this city, for the exploration of a tumour situated on the right side of the face. The accompanying figure gives an accurate representation of her appearance. At the first glance, the disease appeared to involve the upper as well as the lower jaw; but careful investigation soon satisfied us that such was not the case. The tumour was round and very regular; the skin tense, and free from ulceration. Anteriorly, the boundary of the disease seemed to be the first bicuspid tooth; posteriorly, the tumour stretched two inches beyond the parotid region. The base was about an inch lower than the base of the sound side; and the superior aspect was on a level with the lower eyelid. Within the mouth the extent of the disease was less; the finger could be introduced, though with difficulty, between the outer side of the upper jaw-bone and the inner face of the tumour; it encroached, however, very much upon the fauces, pushing the uvula to the left side, and dipping to some extent into the pharynx.

Fig. 1.

The tumour began to form six years ago, and is attributed by the patient to carious teeth, and to the irritating domestic remedies she used for relief of the pain. From the posterior margin of the tumour to the termination of the disease at the bicuspid teeth, the measurement was 9 inches, and from the superior to the inferior surface $7\frac{1}{2}$ inches.

The motions of the joint, although limited in extent, were perfect.

The sensations communicated to the finger in examining the tumour were different in different points. At one spot, that of extreme hardness; and at another, that of softness amounting almost to fluctuation. Again, the parietes were elastic, and presented the peculiar sensation which the mixture of bone and cartilage invariably offers in these affections.

The disease was pronounced to be osteo-sarcoma, and an operation sug-

gested. The patient cheerfully consented, and was immediately placed under preparatory treatment.

On the 12th June the operation was performed in the hospital of Washington University of Baltimore, in the presence of a number of physicians and students.

Professor Baxley and Dr. T. H. Buckler kindly afforded their valuable assistance.

The primitive carotid artery of the right side was first secured by ligature in the usual manner; the patient lying on a narrow table on her left side: the wound was closed with the interrupted suture.

The first incision was then made upon the tumour, extending from the condyle to within half an inch of the commissure of the lips, and being convex downwards. A flap was then formed by dissecting the skin and muscles upwards from the tumour. The second incision was parallel with the first, about an inch lower—the space between the two being left attached to the tumour. A second flap being made, by dissecting downwards from the tumour, the space between the anterior terminations of the incisions was divided, and the knife passed around the bone; the first bicuspid was now removed by the forceps, and the saw applied in its cavity. The bone thus detached served as a lever, and assisted in effecting the disarticulation of the jaw. The straight bistoury was used to divide the muscular attachments of the tumour, being passed on the inside of it, and, finally, the ligaments and pterygoid muscles were severed, and the whole mass removed.

In completing the detachment of the tumour from its connections with the temporal bone, the knife was unavoidably plunged into the tumour, at this point very soft, and gave issue to a large amount of dark blood, so rapid and abundant, in fact, as to startle us with the apprehension that the jugular vein had been divided. This was soon ascertained to be unfounded.

The diseased mass being removed, the superior maxilla was found to be healthy, as also the glenoid cavity of the temporal bone; the soft parts were natural in appearance, and no hemorrhage occurred more than a general oozing from the deep cavity. This was soon arrested by the application of the muriated tincture of iron, and we proceeded to dress the wound. The edges were brought together, and retained by the interrupted suture and adhesive straps.

The operation was commenced at half-past eleven o'clock, and the patient was removed from the amphitheatre at twenty minutes before one, having been an hour and ten minutes on the table. During this time her composure and fortitude were remarkable. In a momentary pause in the operation she asked if her conduct was satisfactory. She became faint occasionally, but easily revived with the assistance of a little wine and water.

At 2 o'clock, P. M. I left her under the charge of Drs. Massey and Davis, the resident physicians of the hospital. At that time her pulse was 70—feeble, skin cold, intelligence perfect. She was allowed a little cream and water as a drink.

5 *P. M.* Pulse 90—skin cool. She has been slightly wandering in mind since last visit; complains of pain in swallowing.

9 *P. M.* Does not recollect the visit at 5 o'clock. Pulse 110—skin warm. Both sides of face have the same temperature—discharge of bloody saliva through the mouth. Has been sleeping since last visit.

June 13th—6 o'clock, A. M. Pulse 106—skin warm, but pleasant; took tinct. opii, g^{tt} xxv. last night; slept tolerably; mind tranquil; same diet.

12 *o'clock, M.* Doing well. Pulse 104.

14th—4 A. M. Restless all night; now sleeps; has coughed several times; pulse 118. ℞.—Enema of castor oil.

15th. Removed dressings to-day; find that union by first intention has taken place nearly throughout the wound; reapplied straps; pulse 104. Bowels were not satisfactorily evacuated by the enema. ℞.—Senna and sulph. magnes. q. s.

16th. Slept well last night; appetite returned; she asks for coffee and chicken soup; continue cream and water.

17th. Dressed wound again to-day; union perfect except in two spots, from one of which exudes a sloughy sanious fluid, and from the other distils saliva, the consequence of the unavoidable division of the duct of the parotid gland. The mouth is considerably drawn to the left side, from the necessary division of the portio-dura nerve.

18th. Doing well; same discharge from the spots mentioned. Touched the salivary fistula with nit. argenti.

20th. Asked to sit up to-day; diet, chicken, beef-soup and crackers; discharge is diminishing.

21st. Walked down stairs to-day unassisted.

25th. Improving daily; ligature still very firm around carotid artery; fistulous opening diminishing.

July 1st. Fistula nearly closed; ligature less firm, but still tenacious.

4th. Removed ligature to-day, with a very slight effort; fungous growth about the wound in the neck; touched with nit. argenti.

8th. Fistula entirely closed; wound in neck nearly healed.

10th. Patient left the city this morning for her residence.

Upon examining the tumour after removal, it was found to consist, in part, of four considerable cavities, each capable of containing an ounce or more of fluid, imperfectly divided from each other by partitions of bone, or of an admixture of bone and cartilage, and lined by a very delicate serous membrane; and, in part, of the caseous degeneration so constantly formed in these affections. One portion, about two inches in length, being the

anterior termination of the disease, presented the appearance of healthy bone, though three or four times the natural thickness of the jaw at this part. In one of the cavities spoken of, was formed one of the molar teeth, in a state of caries, attached to the remains of its alveolar process.

Remarks.—The ligature of the common carotid artery previous to removing the lower jaw-bone from its articulation, although condemned by high authority, and for the most part justly condemned, was, it is conceived, in this instance, properly resorted to. The depth to which the tumour extended in the neck rendered it highly probable, in the opinion of all who examined it, either that the branches of the main trunk had become diseased by firm and long-continued pressure of the bone, or had contracted such adhesions that any attempt to separate them from the diseased mass would have induced their rupture. And although neither of the conditions anticipated was found to have occurred, the enlarged state of the divided vessels and their multiplied number must, without the preparatory security resorted to, have exceedingly complicated the operation, and would, perhaps, have caused a fatal result from the exhaustion consequent upon the securing of the individual vessels as they were divided,—for in such deep wounds it is not always easy to discover the bleeding vessel, and the search is invariably harassing to the patient. The consequences of secondary hemorrhage, also, in case some untied artery should retreat and elude the search, are to be calculated.

I have had the gratification to hear, at this date, that the patient is in excellent health, and has resumed her domestic occupations.

The accompanying figure, taken twenty-five days after the operation by my accomplished young friend, Mr. Caton Woodville, represents her appearance at that time very accurately. I learn from her friends that the distortion of the mouth is gradually diminishing.

Fig. 2.

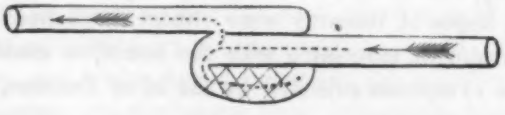
Baltimore, *August* 1*st*, 1844.

ART. IV.—*Two cases of Perineal Operation on the Urethra; in one case to relieve traumatic stricture, and in the other to restore the cystic portion of the canal, which had been completely obliterated.* By WASHINGTON L. ATLEE, M. D., Lancaster, Penn., Professor of Medical Chemistry in Pennsylvania College.

CASE I.—In the fall of 1842, William ——, a mulatto, about 25 years old, entered the Lancaster county hospital, afflicted with a very troublesome obstruction in the urethra. He gave the following account of himself:—two years before, while riding on horseback, the horse fell with him, and he received a severe injury in the perineum. This was immediately succeeded by a copious discharge of blood, which continued, gradually diminishing, for three days, and after it had ceased, it was followed by a stillicidium of urine, which has existed uninterruptedly, excepting when there has been complete retention, ever since. The summer after the injury, there was a complete retention of urine, which a physician in Reading relieved with the catheter without much difficulty. Previously to the use of the catheter, a small tumour had been developed in the base of the scrotum, along the track of the urethra, and after its employment, this tumour rapidly increased to the size of an almond. Last winter, a surgeon of Philadelphia had operated on him with the stillet and canula three successive times, but without affording him any material relief.

The patient being even less intelligent than the common class of negroes, and his statements varying at different times, I cannot implicitly rely upon the accuracy or truth of the foregoing history. The following, however, was the condition in which I found him. The prepuce was very much elongated, and encircled by a string anteriorly to the glans penis, so tightly tied as to prevent the escape of any urine unless desired by the patient. Behind this ligature the prepuce was distended into a considerable-sized bag containing urine, which was continually accumulating from the bladder. Several times, during the day, he would relax the ligature and empty this reservoir, thus keeping himself dry and comparatively comfortable. In the course of the urethra, and within the base of the scrotum, an elastic tumour, about the size of an almond, could be felt. This could be observed enlarging with every effort to urinate, and after this effort had ceased, pressure upon the tumour would diminish its size, and at the same time cause a few drops of urine to escape from the penis. If the urethra behind this tumour were examined during these expulsory efforts, it was always found also much distended with urine, and yet the strongest straining could not effect a more rapid escape than a mere *guttatim* discharge. This dropping continued, also, involuntarily when the ligature was not applied, very much as it does

in cases where the bladder overflows. There was no obstruction to the passage of a sound until it reached the *posterior part* of the tumour, where it was stopped abruptly. If pressure were now pretty forcibly continued on the sound, the sensation communicated to the hand by the obstruction appeared to arise from the resistance of membranous structure, and that portion of the urethra traversed by the sound would be dragged back by the pressure. The sound could be felt occupying a position to the left of, and above the tumour, as may be understood by viewing the following diagram, made to illustrate the relative position of the tumour, with the anterior and posterior sections of the urethra, and also the course of the urine is indicated by the dotted lines and arrow-heads.



September 19*th*, 1842. Having secured my patient as for the operation of lithotomy, I operated as follows, in the presence of my colleagues, Drs. J. L. Atlee, and J. K. Neff, and of several medical students. A grooved sound was passed down to the obstruction, and taken in charge by my brother, and the scrotum having been elevated to its utmost extent, I cut through its posterior wall a little to the left of the raphe, and immediately came down upon the tumour. This having been laid open next, which was followed by the escape of a few drops of urine, I endeavoured to feel for the sound, but its *naked* point could not be discovered. The patient was now directed to expel some urine, which flowed through the wound, but instead of escaping from the urethra, at the posterior edge of the cut in the tumour, it came out at its most anterior point, as will be readily understood by examining the diagram. The knife had not yet reached the walls of the urethra, and of course was not yet in contact with the sound. Now cutting through the posterior section of the urethra, and then through the septum which divided the two portions where they overlapped, I came into the groove of the instrument with the point of the bistoury. Then slitting the septum to the extreme ends of the sac both ways, and thus laying open the track of the urethra, and destroying the cystiform character of the tumour, I withdrew the sound, and introduced a flexible catheter through the urethra into the bladder; closed up the wound over it with five gold needles and twisted suture, and put the patient to bed. The catheter was secured by attaching it to a gum elastic ring which surrounded the base of the penis.

During the operation, the left testicle fell out of the wound and hung down, suspended by the cord, until it was completed.

20*th*. The patient is doing well. He passed a chamber-pot full of urine through the catheter since the operation, but none through the wound.

21*st*. Passed the same amount of water through the catheter; some came through the wound last night and to-day.

23*d*. The needles were removed yesterday. The wound will not heal by the first intention. The catheter escaped last night, but was easily introduced again by the patient.

24*th*. The patient has become very troublesome and careless. The catheter escaped last night again, and remained out until 5 P. M. to-day. The gum-elastic catheter has been so much injured by the action of heat and urine, as to render it an unsafe instrument. The silver catheter, therefore, has been substituted.

Symptoms of cystitis now supervened, and the patient became very ill. This was rapidly followed by acute inflammation of the peritoneum and pleura, and the hopes of recovery were almost abandoned; but by prompt antiphlogistic treatment, associated with the remedies usual in such cases, these dangerous symptoms subsided by the 2d of October, after which my patient continued to do well.

As his general health continued to improve, the wound entirely closed, after which he was able to pass his water *per urethram*, in a full, continuous and vigorous stream. I cautioned him about introducing the catheter frequently, and particularly whenever he desired to urinate, in order to prevent contraction of the urethra, or infiltration of urine through the incised parts into the cellular tissue around it; but I am fully satisfied that he seldom attended to this. He, however, continued to do well during the following winter, and having become strong, hearty and capable of working, he was discharged.

Subsequently he was taken up as a vagrant, thrown into the Lancaster county prison, thence removed to the almshouse, and was placed as nurse over several patients afflicted with phlegmonous erysipelas. While thus engaged, he was seized with erysipelatous inflammation in the perineum and scrotum, which again blocked up the urethra, and terminated by leaving a fistulous opening in the scrotum. After his recovery this finally closed, and, although the parts were not in as good condition as before this attack, he had a much better use of them than before the operation. He soon after left the hospital, and I have heard nothing of him since.

The peculiar malformation of the urethra, in the above case, I have no doubt originated either through forced catheterism, or the employment of the stillet.

Case II.—In taking charge of the hospital in February, 1843, I was applied to for relief by W—— McG——, aged 52 years. He is a large framed man, apparently of good constitution originally, but now much emaciated by his harassing disease. The following history, which I think may be relied on, is given by the patient. He had been in the army of 1812, where he contracted gonorrhœa, under which he suffered about one

month. At the same time a phagedenic ulcer attacked the parts about the frenum of the prepuce, and in the course of a week opened into the urethra. This opening remained, and is at present one-third of an inch in diameter. Three or four years afterwards he experienced difficulty in making water, which he attributed to an attack of gravel. This continued until fourteen or fifteen years ago, when, in consequence of the symptoms becoming greatly aggravated, he applied to a respectable physician of Lancaster, who discovered the existence of a stricture, and after considerable difficulty, succeeded in introducing a catheter into the bladder. For one year after this, he did not suffer from the symptoms of gravel. They, however, again returned, and continuing to get worse, complete retention finally followed, requiring a resort to the catheter. Three years ago was the last time that the catheter could be introduced. One year afterwards, he took the small-pox, which was succeeded by a large abscess in the pelvic and lower abdominal region, and which finally pointed in the perineum, where it was punctured by a lancet, and discharged about two quarts of purulent matter. After this no water, excepting a few drops, passed per urethram, but all was discharged through several openings in the posterior part of the scrotum and in the perineum.

In his younger days he was intemperate, but for the last ten or eleven years he has led a rather temperate life.

He entered our hospital in the early part of last winter, during the attendance of Dr. J. K. Neff. Unable to support himself, a constant source of trouble to his friends, and offensive to all about him, this miserable individual came to the hospital to spend the rest of his days, having given up all expectations of relief. Dr. Neff attempted dilatation with bougies, but with very little advantage to the patient.

When the individual came under my care, I found him in the following condition:—The scrotum was distended to a considerable size by two large inguinal hernias, which had existed for four years, and had been produced by straining to make water. The posterior third of the scrotum was very much indurated and enlarged, having several fistulous canals pervading it and opening upon it. This mass, which seemed to possess the physical characters of pure scirrhus, was of the bulk of the largest-sized fist, incompressibly firm and unyielding, and extended backwards through the perineum to the anus, and forwards to within four inches of the anterior extremity of the urethra. A bougie could be passed into the urethra, beyond the anterior boundary of the hardened mass, and then, upon pressing it firmly, it appeared to become tightened and would stick. While the bougie was in this position, the thickening around the walls of the urethra could be traced to the depth of one inch and a half in thickness, along the left side of the bougie, and about three-fourths of an inch along its right side, and the inclination of the point of the instrument was evidently towards the right side, depending, no doubt, upon the greater deposition of scirrhous matter upon the

left side of the urethra, thus altering the proper direction of the latter. He was not able to retain his urine longer than two hours, and when he discharged it, it required the greatest efforts, and then it escaped from the several fistulous openings above referred to. In addition, he was also much afflicted with hæmorrhoids, a complaint of his younger days, having existed before 1812. The symptoms were always much aggravated whenever he became constipated.

I put him on the use of blue pill, conjoined with cremor tartar, as a laxative, with frictions of camphorated mercurial ointment on the diseased mass, and of unguentum gallæ on the hæmorrhoidal tumours. The piles soon disappeared, but the patient not perceiving any diminution of the scirrhus under the use of the unguent. hydr., applied the galls also to it, and with a very decided effect in reducing the enlargement, although this reduction had no effect upon the introduction of the sound; the finest flexible sound could not be introduced beyond six inches.

The patient, having heard of the operation in the first case, frequently begged of me to attempt to relieve him by a surgical operation, but I invariably gave him no encouragement. He finally became desperate, said that he would undergo any thing to be relieved, that he would rather die than live much longer in such misery, and became so urgent for an operation, that I determined to take his case into consideration. After maturing my plans, I called a consultation of the house-surgeons, who readily acceded to my propositions, and the 24th of April was fixed upon for the operation.

The patient, having been directed to retain his water for two hours previously, and secured as in the operation for stone, I proceeded to perform the following operation, assisted by my brother, and in the presence of several respectable physicians and students of medicine.

A curved staff, grooved on its convex edge, was introduced into the urethra as far as practicable, and taken in charge by my brother. The two hernias being reduced, and the scrotum elevated to its greatest extent, I made a deep incision about five inches long, commencing on the scrotum and continuing it on the raphe through its posterior third, and through the perineum, as far back as to the verge of the anus. This incision passed through some of the fistulous tracks, which were lined with a dense and shining mucous tissue, and also passed into an exceedingly dense substance, which grated under the edge of the knife precisely like genuine scirrhous structure. The point of the sound could not be felt until I had penetrated into this dense tissue about two inches in depth, and then I discovered it about one-quarter of an inch to the right of the mesian line. Now turning the edge of the knife in the direction of the sound, I struck its point, and found it rested in a complete *cul-de-sac*, from which, back towards the bladder, no permeable urethra, nor any remains of it, could be detected or traced. Having expected that at this stage of the operation, the only difficulty to encounter would be to make a section of the stricture, and thus

forming a communication with the posterior portion of the urethra, which would enable me easily to pass on the sound into the bladder, and complete the operation by introducing a large catheter, and healing the wound over it, I was taken somewhat by surprise, at meeting a mass of disease such as there existed. The corpus spongiosum, the urethra, from the point of the sound back to the bladder, and the tissue around it about two inches anterior to the point of the sound, the whole perineal tissues, the parts on the anterior wall of the rectum, and up to the arch of the pubis, all appeared to have degenerated into this indurated fibro-cartilaginous structure, to such an extent as to have considerably elevated the neck of the bladder into the cavity of the pelvis. The great difficulties of the operation now only commenced. After liberating the point of the sound, and making a free section of the supposed stricture, the parts were minutely surveyed and examined with a fine director, without discovering any path open to the bladder. Having nothing to guide us any further in the operation, I deepened the incision through the dense mass successively towards the pubis, prostate and recto-vesical space, probing carefully with my finger, and examining for an opening with the director after every stroke of the knife, until I had gone as deeply as prudence would permit; and still no avenue to the bladder could be detected. After this unsuccessful survey, I determined to make an artificial opening into the bladder, and for this purpose directed my brother to pass on the grooved sound through the wound towards the bladder, in the hope that the natural curve of the instrument might direct its point to the neck of the bladder, and thus serve as a guide for the use of the knife. The instrument was carefully carried in, and appeared to occupy a suitable position to guide a bistoury through the prostate gland into the bladder. Fearing, however, that the abnormal condition of the parts might have so altered their relative position, as to make the sound an unsafe guide for the knife, I took the precaution of first introducing my finger into the rectum. By this fortunate proceeding, I discovered the sound lying close upon the anterior wall of the rectum, and the necessity of being exceedingly cautious in the future steps of the operation. Withdrawing my finger from the rectum, I passed it through the wound until I fixed it against the arch of the pubis, then taking the sound from my brother into my other hand, I drew it out several inches, and, firmly depressing the handle, I again passed it in so as to elevate the point immediately behind the pubis, and satisfied myself as to its real position. Now, placing the bistoury in the groove of the staff, I deepened the incision towards the bladder, so as to admit the point of the index finger some distance in that direction: still I could discover no opening into the bladder, either with the finger or director. Between the point of the finger and the rectum, there still remained several strong, firm bands and a considerable portion of condensed tissue, which I thought best to divide, in order to enable me to reconnoitre more fully. Placing my finger again in the rectum, I severed completely, with a knife in the

other hand, all resisting and morbid structure, cutting until I felt the knife gliding upon the anterior wall of the gut. Having thus passed through all the condensed tissues, and secured ample space, I again probed with my index finger beneath the sound towards the bladder, until I struck against a ligamentous plate, which must have been either the triangular ligament, elevated by the diseased mass, or the pelvic fascia itself. With a director I again endeavoured to find an opening in the ligament leading to the bladder, but, after a patient search, was entirely foiled. Giving up the hope of finding any communication with the bladder, and almost despairing of being able safely to relieve my patient, I thought of a small trochar, about three inches long, with which I had fortunately prepared myself, and proposed using it as a dernier resort. Still taking the sound as a guide, I passed the point of the trochar up in contact with it, then sliding the canula beyond the stillet, until it rested against the ligamentous plate, I plunged the trochar in the direction of the bladder, as far as I considered it safe. On withdrawing the stillet, no urine flowed, so that I failed again in communicating with the bladder. I now passed a straight director through the canula, and found that it still encountered a resisting medium at the other extremity. Removing the canula and also the sound, and substituting my left index finger as a guide, I passed the point of the trochar directly up to the pubic arch, then raising the handle so as to lower the direction of the point to a horizontal line, I gradually sunk the instrument in until it was resisted, then making another plunge, my patient immediately cried out, "*that's in the bladder.*" Overjoyed at this expression, I withdrew the stillet in order to see the urine flow, but what were my chagrin and disappointment when none appeared? I again passed through the canula a small grooved director, which, detaching coagula that blocked up the instrument, caused a few drops of urine to trickle out, and to announce, without doubt, that it was in the bladder. The great depth to which the trochar had to penetrate to reach the bladder, may be known by the fact that the canula now lay imbedded far in the wound, with its rim close under, or rather within the arch of the pubis. In place of the director, I introduced a small gum-elastic catheter, through which urine flowed in drops. This was intended merely as a guide to the bladder, to remain after the removal of the canula, which was now slipped away, riding upon the catheter. A director was now passed into the bladder, with its groove towards the left side, when, with a Cooper's hernia bistoury, I divided the ligamentous bands and the descending fibres of the levator ani on that side; then reversing the instrument, I cut the corresponding parts of the opposite side. The point of the finger could now be introduced into the neck of the bladder, the hand gliding in between the separated lips of the wound. A large silver catheter, a full quarter of an inch in diameter, and specially constructed for this operation, was introduced into the penis, and passed easily onward into the bladder, from which there now flowed through the catheter, when aided by pressure upon the hypogastrium, nearly one

quart of water: thus completing the operation very much to the relief both of the patient and surgeon.

The catheter having been secured with tapes, in the ordinary way, the patient was put to bed, and cold water dressings were ordered to the wound.

The operation was performed between 11 and 12 o'clock, A. M.; he had passed water between 9 and 10; and when laid upon the operating table, he could scarcely retain his water any longer.

I visited my patient in the evening and found him quite comfortable. He had passed one pint of urine through the catheter at two different periods since the operation, and he could retain his water longer than before.

25*th*. Doing well; had a comfortable night; passed water four times, one quart through the catheter, none by the perineum. By a voluntary effort he passed a half a pint of urine, in my presence, in a continuous jet through the catheter.

26*th*. Not so well; chill this morning; severe attack of colic, and bowels distended with flatus; some tenderness on pressure in the epigastrium; tongue coated with yellowish fur, which, however, had been the case since the operation; pulse 124. Passed one quart of urine since yesterday morning, none by the wound. Ordered oleum ricini every six hours until free evacuations.

27*th*. Better; pulse 104; no tenderness in the epigastrium; wound has a healthy appearance; oil operated six or seven times, and without pain; it, however, irritated the stomach and kept up frequent vomiting; power of retaining urine greatly increased; matter flows out of the urethra around the catheter.

28*th*. Pulse 84 to 88; tongue coated with a loose, whitish fur, and disposed to clean; irritability of stomach continues. Ordered effervescing draughts of soda every two hours.

29*th*. Doing well; tongue clean and stomach quiet. The catheter was removed to-day for the first time, and it was accomplished easily and without pain. It was blackened by oxidation throughout the whole track of the wound. After polishing the instrument I attempted to introduce it again, but after getting it in as far as the original *cul-de-sac*, it was suddenly stopped. I endeavoured, for some time, to overcome the difficulty, and almost despairing of success, it at last occurred to me that the passage was not in a direct line; that the mesian line was the hypothenuse of a triangle which had its vertex at the point of the *cul-de-sac*. With this in view, I gave the point of the catheter the necessary inclination, and it glided easily onwards, and almost fell into the bladder.

May 6*th*. Removed and returned the catheter with the greatest ease. Wound suppurating and granulating finely.

10*th*. To-day urine escaped from the wound for the first time, and only during the efforts to urinate.

11*th*, 4 P. M. The catheter came out last night, and the patient was unable to return it, in consequence of which the urine passed by the wound. Examining the instrument I found it completely clogged up, which will account for the escape of urine through the wound yesterday, and probably also for the expulsion of the catheter. It was introduced again without difficulty.

24*th*. No urine escaped by the wound after the last date. The catheter was frequently removed, cleansed, and returned by the patient himself. No water was permitted to leave the bladder excepting through the instrument, which was always kept corked, and removed *ad libitum*. The wound is perfectly healed; the condensed tissue has nearly all been absorbed; and the fistulous openings have disappeared.

June 4*th*. Contrary to positive directions, the patient very imprudently passed urine to-day without the catheter. He made it in a full stream and with force. It, however, resulted in no injury to him, no urine having been extravasated into the surrounding tissues.

18*th*. Began to leave out the catheter for short intervals, but was ordered to employ it in urinating.

21*st*. Leaves the instrument out all day, retaining it at night, and using it while passing water.

28*th*. Patient desires to leave the hospital and go to work. He states that for the last week he has made water in the natural way; that he can retain it as long as he ever could; that he has as full and perfect command over it as ever; that he can introduce the catheter with ease by observing the angular offset in the passage; that he is in better health than he has been since 1812, and in quite as good health as ever; that the hemorrhoids never returned; and that he believes he would not have lived three weeks longer if it had not been for the operation.

I examined the parts, found the hardness and thickening of the perineum had entirely disappeared, but some induration of the scrotum still remained, which the patient does not attribute to the stricture, but to an old induration resulting from an injury received fifteen or sixteen years since in mounting a horse, when one of the testicles swelled as large as a fist, and was so sore for a month that he could not bear the touch of a finger.

During the first few days after the operation, the patient was kept on absolute diet. So soon, however, as the danger of inflammation was over, and the wound began to suppurate and granulate freely, he was allowed good substantial nourishment, after which his general health and appearance rapidly improved.

June 30*th*. The patient was discnarged and ordered to introduce the instrument daily for several months

ART. V.—*Isopathia: or the Parallelism of Diseases.* By JOHN M. B. HARDEN, M. D., of Liberty County, Georgia.

THE disposition of diseases to "anastomose with one another," or to wear each other's livery, has long been remarked by some of the most eminent medical observers. Sydenham, Balfour, Cleghorn, Lind, Clarke and Rush, have all recorded the fact in their notices of epidemic fevers. Indeed, the former is said to have insisted on the doctrine, that "epidemics of continued fevers, although *resembling each other in respect to many of their symptoms and general characters, are often very different from each other*, for a mode of treatment which is useful in one, may be decidedly pernicious in another."* Hence the importance which he has attached to the epidemic constitution of the air, in determining the true character of these diseases. Hunter† declared that "diseases of the *same specific nature* not *only vary in their visible symptoms or actions*, but in many of *those that are visible*, arising, probably, from peculiarity of constitution and causes, which will make the effects of application vary almost in the same proportion." Dr. Alison‡ says, "when changes in the structure of the body, that take place in the course of disease, are examined during life, and more especially after death, it appears that *different combinations of symptoms are often apparently excited by the same fundamental diseased action, and, consequently, found in connection with the same alteration of organic structure;* and again, that very *different alterations of structure may be attended, in different individuals, by symptoms, the greater number of which are very nearly the same*:"—and Andral,§ in his recent work on Pathological Hæmatology, has advanced the same sentiment. "These various facts," says he, "are not inconsistent with one another; they only throw more light on one of *the most important of medical truths*, namely, that two *diseases may have identical symptoms without being of the same nature*, and that however close their resemblance, they may still require different modes of treatment, because very different conditions of the economy may give rise to or maintain them."

So great a bar does this substitution of one form of disease for another offer to a correct diagnosis and classification, that it is not surprising that Brown and Rush should have adopted the maxim, "Nosologia delenda," nor that the latter should have declared that, however varied morbid actions may be by their causes, seats and effects, they are all of the same nature," and that "to describe them by any fixed or specific characters, is as impra-

* Med. Chir. Rev. 34th, 601. † On the Blood, 2d, 53.

‡ Outlines of Pathology.

§ On the Blood in Disease, p. 129, translation by Meigs and Stillé.

ticable as to measure the dimensions of a cloud on a windy day, or to fix the component parts of water by weighing it in a hydrostatic balance."*

We might cite other authorities in support of the same general truth, but this subject has never received that particular attention which it really deserves. There can be no doubt that this is the true ground of most errors in the diagnosis and treatment of diseases, and of the many differences of opinion among medical men concerning the nature and proper treatment of the *same supposed disease*, as well as the various success of the *same remedies in the same supposed cases.* It shall be our object, therefore, in the following remarks, to bring this matter distinctly before the notice of the profession, by attempting to show that there are many symptoms and groups of symptoms which have been, and still are, regarded as distinct diseases by practitioners, and arranged as such by systematic writers, which may be referred TO THE SAME PATHOLOGICAL STATE OF THE SYSTEM, AND MAY MUTUALLY REPLACE ONE ANOTHER IN THE SAME OR IN DIFFERENT INDIVIDUALS. To this law or feature of disease, we have applied the term ISOPATHIA,† or *Isopathy*, and we proceed to point out as briefly as we can some cases of this parallelism from our own as well as from the observations of others.

In order to give method to our remarks, we beg leave to divide diseases into the following *generic* TYPES, under which we will treat of the individual species and their *modifications,—Febrile Types, Inflammatory Types, Purulent Types, Tuberculous* or *Strumous Types, Scorbutic* or *Hemorrhagic Types, Exanthematous Types, Hydropic Types,* and *Gouty* or *Podagric Types.* We will confine our remarks in this paper to the first or febrile types, reserving what we have to say upon the others for some future communication.

Febrile types.—Fever is confessedly the most common form of disease to which the human system is subject. Almost all diseases are more or less connected with it, and it is even probable that all morbid forms have their prototype in some essential fever. This seems to have been the opinion of many, if not most of the older writers. The essentiality of fever was the doctrine of Sydenham, Morton, Morgagni, Fordyce, Cullen and others. Marcus, we believe, was the first who identified them with inflammation,

* Inquiries and Observations, 3d, 34.

† ἰσον πάθος, æqua affectio. The term *isomerism*, in chemistry, while it furnishes an analogy in etymology, affords, also, a good illustration of our use of the above. It is known that there are many inorganic bodies with different external appearance, which consist of the same elementary parts, while others, essentially distinct in composition, present the same external form. To these last the term isomorphic has been applied, and even here the analogy holds in disease, for, as we have seen, there are many so called diseases, with the same external form or type, so far as regards their seats and symptoms, which are still pathologically distinct. To such diseases the term *isotypic* might be very properly applied. Diseases, then, may be *isopathic* and *heterotypic*, or *esotypic* and *heteropathic*, as we hope to make appear in the course of our remarks.

and seated them in the blood-vessels. Clutterbuck afterwards fixed their seat in the head. Mills placed them indifferently in the head, the lungs, the liver, the stomach, or in any other organ which happened to be attacked with inflammation. Edward Miller directed the attention more particularly to the stomach as the seat of these fevers, and this view was adopted in France by Prost,* Caffin, Alard and Petit, and, under the fostering genius and unremitted labours of M. Broussais, has been extensively diffused in modern times. But at present there appears to be a tendency among medical men to revive the former doctrine, and the essentiality of fever finds advocates in such men as Andral, Chomel, Tweedie, Christison, Copland, Alison and others. As we have already hinted, we are inclined to adopt this view of fever, although we are willing to admit that, in most of the essential fevers, some lesion of the alimentary canal is very generally an attendant. "These lesions of the viscera, however, whether of the cranial or of the thoracic or abdominal cavities, are all secondary or consecutive phenomena of the disease, their occurrence being attributable rather to the cotemporaneous influence of other atmospheric agencies, to the idiosyncrasy, habits, and previous state of health of the patients affected, or perhaps to the differences in the nature and degree of the aërial poison that has acted upon the system."† The discrepancy among authors in regard to the seat of the same fever is sufficient evidence that they *have no determinate or invariable seat.* "If we were to judge," says Andral,‡ "by post-mortem examinations only, we should often believe that inflammatory, bilious, catarrhal or mucous, typhoid or adynamic, nervous or ataxic fevers were *one and the same disease.*

Fevers have been variously divided and arranged by different authors. The most common division has been into intermittent, remittent and continued, including under the last the synocha, synochus and the typhus. We prefer to divide them into the intermittent, synocha or inflammatory and typhus, and our reasons for this will appear in the course of our remarks. We shall first consider the intermittent or marsh fever, as it has been called. We believe it is generally conceded that the intermittent and remittent are only different types of the same fever. Sydenham§ believed in this identity, and so did Dr. Rush.‖ Dr. Cullen¶ made no distinction between them. Dr. Parr** says, "Intermittents and remittents arise from the same causes, are relieved by the same remedies, and pass into each other," and Dr. Good,†† who wished to make a specific distinction, has given the same proof of their identity. Dr. Fothergill‡‡ speaks of remittents becoming intermit-

* Broussais, Exam. des Doctrin. Med., tom. 2d, and 4th passim.
† Med. Chir. Rev. vol. 40th, 516.
‡ Ibid. 23d, 236.
§ Exam. des Doct. Med., tom. 2d, 96.
‖ Med. In. and Obs.
¶ First Lines.
** Med. Dict., *Art.* Fibris.
†† Study of Med., 2d, 48. 69.
‡‡ Med. Chir. Rev., 26th, 72.

tents, and being cured by bark. Dr. Booth* says, "It is transitions of this nature that justify the idea of the types of these fevers being modifications of one disease, varying in the same individual, and frequently assuming a difference of character in successive seasons, gradually approximating to a typhoid form, without any difference of cause beyond atmospheric influences." Dr. McDivitt,† in his able report of the Kent and Canterbury Hospital, has also pointed out this connection. Dr. Craigie‡ is disposed to allow the "*interchangeable nature*, *the identical origin*, and the simultaneous existence of intermittent and remittent." Drs. Bright and Addison§ admit that they are very closely allied, having the same origin, and in many respects the same phenomena, the chief difference consisting in the character of the paroxysm. M. Maillot,‖ the chief physician of the Military Hospital at Bon, in Africa, in speaking of the fevers of Algiers, says: "Whoever will consider the facts now stated, cannot hesitate surely to admit, that the remittent and continued fever of the hot season, in such a climate as that of the northern coast of Africa, are in truth intermittent fevers, complicated with a local mischief, which has the effect, sometimes, of merely obscuring the features of the original disease, and at other times of masking them altogether, so that they cannot be recognized;" and again, in speaking of the treatment, he holds the following emphatic language:—"C'est l'idée qu'on se formera de ces intermittentes, de ces remittentes, et de ces fievres continues se succedant tour a tour se remplacant, se chassant, puis reparaissant, tournant, pour ainsi dire, dans le cercle annuel; c'est de la filiation que l'on verra ou non entre ces maladies si diverses en apparence, *se indentiques pour le fond* que dependra le choix d'un traitement vrai ou faux." From our own observations of these fevers, we are disposed unhesitatingly to adopt the opinion of Rush, that the tertian is the original type, and the double tertian the form in which all our autumnal remittents present themselves, and the difference in the intermissions depends upon the lengthening or shortening of the paroxysms, so as to run into each other or make a complete interval.

But it is to Dr. McCulloch¶, of England, that we are mainly indebted for a clear exposition of this connection, as well as the relation of this fever with other diseases, hitherto regarded as specifically distinct, and to this author we owe many of the views set forth in the following pages. In order to point out more clearly this parallelism, we will divide the pathognomonic symptoms of this fever into the *depressing* or *sedative*, the *neuralgic* or *painful*, the *convulsive* or *spasmodic*, and the *critical*. The vascular excitement and functional disturbances in general cannot be considered

* Med. Chir. Rev. 26th, Life of Armstrong.
† Am Journ. Med. Sci., 46th, 414.
‡ Am. Jour. Med. Sc. 46th, 414.
§ Elements of Pract. Med.
‖ Med. Chir. Rev. 26th, 510.
¶ On Remittent and Intermittent Diseases, where he says, they are virtually the same, p. 59.

pathognomonic, since they occur to a greater or less extent in almost all forms of disease. So, too, the researches of Andral and Gavarret have shown that the state of the blood in these fevers is *entirely negative.* The dissolved or putrescent state of the fluid which is found in some cases, is common to most diseases, and may either be primary or come on in their progress. This condition of the fluids, however, is an important complication, and is intimately connected with those malignant forms of fever and other diseases which we will notice as we proceed.

We go on now to notice those symptoms or groups of symptoms which are *isopathic with one another and with this fever,* and often *replace it either wholly or in part.*

Symptoms of depression or sedation.—These symptoms are all connected with what is known as the cold stage or fit of this fever,—and our object now is an analysis of the modes in which this cold fit may present itself. The degree of coldness manifested in this stage may vary from a mere sensation on the part of the patient to a coldness of the surface appreciable by others. Sometimes the sense of coldness amounts to a mere "aura" in some particular spot. We have heard it referred to the head and to the side. Dr. McCulloch says, "The sensation of cold may be so partial as to occupy but a limb or a single spot, and even but for a few minutes; while, if more universal, it may be equally short and slight." These symptoms may make up the whole of the patient's disease, so far as is apparent to the physician; and in such cases they are usually regarded as nothing more than a form of hysteria. The same may be said of the "*aura epileptica,*" which we are inclined to regard as a symptom of this character.

The cold fit may also show itself in simple drowsiness, which is very frequently the precursor of fever in children; but by far the most alarming and fatal form in which this stage is ushered in, is by *coma* and *apoplexy.* Fevers connected with soporose, apoplectic and paralytic symptoms, forming the "fièvres intermittentes pernicieuses" of the French, and the "febres perniciosæ," of Torti and other authors have long ago been noticed. Werlhoff* has found examples of such fevers in the works of Galen, Paulus Eginetus, Ætius, Amatus Lasitanus, Avicenna, Prosper Alpinus, Lomnius, Eugalinus, Forestus, Bonetus and Cohansen.—Ramazzini describes the same fevers as happening at Rome and Lancisi and Torti at Modena—Sydenham, Werlhoff and Morton were the first, however, who regarded them as modifications of intermittents. In our own climate, it sometimes happens that intermittents come on in this form. "Some† years since, autumnal fever appeared in the interior of the southern states in this form, and was, in many places, denominated the 'cold plague.'" We have never seen a particular description of this fever, but from what we have heard, we conclude that it was identical with the Italian form of this disease.

* Exam. des Doctrin. Med. 2d, 177. † Daniel on Fever.

As *in epidemics* so in *particular sporadic cases*, the first symptom of an intermittent or remittent may be an apoplectic seizure—which may constitute the whole apparent disease—and should no time be given for a development of its true character, the case might be treated as one of apoplexy, and the patient die under that treatment. Andral, in* his "Clinique Medical," gives a very interesting case in point. Whilst considering the subject of "masked intermittents," he *details the case* of a patient who exhibited all the phenomena of "intermittent apoplexy," which, in its return, observed the same regularity as the fevers of this name, and presented itself uniformly and regularly with precisely the same types. The sulphate of quinine was administered, and the individual perfectly recovered. A similar case is recorded in the Journal des Connaissances, and republished in the Medico-Chirurgical Review. The case is given by Dr. Combes,† and was, as in the preceding, cured by the exhibition of quinine.

The apoplexy may be replaced by some form of paralysis, either as hemiplegia, paraplegia or local palsy. Some years ago I attended a child in fever, in whom there was complete hemiplegia, and continued until the termination of the fever, which was cured by quinine. The palsy may be confined to one or more muscles. Ramazzini noticed it in the tongue in the fevers at Rome, producing complete aphonia. But for fear of prolonging our remarks beyond our prescribed limits, we would refer to the work of McCulloch, where this subject is fully treated, and pass on to the

Painful or neuralgic symptoms.—In *all diseases there are three* sources of pain which it is very important to distinguish. It may arise either from a partial or general contraction of muscular fibres, or from a peculiar state of the nerves themselves, or, lastly, from that state of parts which obtains in inflammation. It is of the purely neuralgic that we design to speak at present. The most usual seat of pain in our fevers is the *back* and *head*. We will not pretend to affirm that these pains are always neuralgic, but we cannot help believing, with McCulloch, that they are often of this character. The alternation of the pain in the back with common neuralgia of the face, a case of which is given by him, leaves no doubt upon this subject. The observations of Kremer and Grossheim‡ upon this symptom of intermittents, tend to corroborate the idea of its connection with the spinal nerves. These pains are more or less present in every case of this fever, but sometimes they assume a prominence which causes them to be regarded like other neuralgia as specific affections, under the names of lumbago, sciatica, cephalalgia, hemicrania, &c. The work of Dr. McCulloch, however, has turned the attention of medical men to their connection with intermittents, and we have many cases recently recorded

* Med. Chir. Rev. 27th, 103. † Ibid. 42, 219.

‡ Am. Jour. Med. Sci. vol. i., N. S., 210.

substantiating his views. Dr. McDivitt, in the report already alluded to, says, "that certain neuralgic affections originate in the same cause which produces intermittent fever, cannot well be doubted; for they prevail in the same localities with it, put on the same intermittent form, and are cured by the same remedies."* In the "Bulletin Général de Thérapeutique," there is a paper on intermittent neuralgia, in which the writer says, "most cases of neuralgia have an affinity more or less distinct and decided with intermittent fevers." "Within the last six months there have been observed at Paris a number of cases of masked aguish neuralgia, which, on many occasions, have simulated other diseases, and whose true nature, therefore, has been not unfrequently mistaken." The editors of the Med. Chir. Rev.† say, "that an intimate connection exists between intermittent fevers and various forms of neuralgia, is sufficiently obvious from the genuinely periodic character of numerous cases of the latter disease." "It is scarcely necessary to add that the same remedy, bark, which is a specific for the one, affords as infallible relief for the other;" and they refer, "for some excellent remarks on the analogy between intermittent fever and neuralgia," to Dr. Billing's "First Principles of Medicine," a work which we are sorry we cannot consult. M. Piorry says,‡ "if we consider the intermittent and periodic character of neuralgia, in connection with that of paroxysmal fevers, the manner in which both diseases yield to sulph. quinine, the frequent coincidence between certain neuralgic and paroxysmal fevers, we shall be led to the conclusion, that the 'point de depart' of these fevers is most probably in the nervous system."

These neuralgic symptoms show themselves in various parts of the body. Dr. McCulloch has pointed out the connection of tic douloureux, and a form of toothache with intermittent fever, and cases of these affections successfully treated by sulphate of quinine, are of frequent occurrence. In our autumnal remittents, I have observed the pain of the back to be suddenly replaced by some form of gastralgia, and this last by headache. In the summer of 1840, I was attacked with fever attended with most severe headache of this character, and great irritability of the stomach, and I then noticed that the vomiting was preceded by pain in the stomach, which relieved the headache; the vomiting would relieve the gastric pain, when suddenly the pain in the head returned with renewed violence. This state continued for some time, when, at the suggestion of a friend, now no more, I took a dose of sulph. morphia, which restored me as if by magic. A similar case of metastasis of neuralgia is given in Hufeland's Journal.§ The pain passed from the face to the abdomen, back again to the face, and then to a spot over the left hypogastrium. M. Piorry regards the pain in the

* Med. Chir. Rev. 35th, 545.
† Ibid. 38th, 206.
‡ Ibid. 43d, 193.
§ Med. Chir. Rev. 30th, 236.

spleen or splenalgia as neuralgia. We have some reason to suspect that there are pains in the liver, (hepatalgia,) and of the ear, (otalgia,) which are of this character. But we have said enough upon a point which "affords much curious matter for speculation," and take up the SPASMODIC OR CONVULSIVE SYMPTOMS. The most obvious convulsive motions which occur in our intermittent fevers, are brought before our notice in the form of rigor; but a true rigor is not always present, and then the most of the reaction is developed in some other form of spasm or convulsion, which *replaces the rigor or becomes a substitute for it.* This convulsion may be either very general or very local, or may be of a tonic or clonic character, and I believe this may be laid down as a law in intermittents, that in proportion to the local developments of these convulsions in one part or tissue of the system, is its diminution in another. Thus supposing, with Dr. Rush, that the vascular excitement is nothing more than a convulsion of that system, if the muscular contractions be *general, violent and long-continued*, the subsequent arterial excitement will be less *violent and of shorter continuance.*

We have no doubt that a rigor, in some form or other, may always be detected in these fevers, but in some cases the evidences are so feeble as to make the diagnosis very obscure. We will begin with those local symptoms which we suppose to replace the rigor. The most feeble muscular contractions which we have ever noticed with any reason for believing them connected with fever, have consisted in twitchings of a muscle or part of a muscle. We are aware that we subject our observations to a suspicion of incorrectness, when we make this remark, but we hope that we may not be altogether condemned without good evidence against us. We have known these twitches to take place in portions of the external oblique. In our own case, we believe we have been warned of approaching fever by these twitches over the right hypochondriac region. We have been consulted in a case where it was confined to the pyramidalis, and was more of the nature of spasm, for it appeared in the form of a tumour, and we have known a spasm of a portion of one of the recti abdominis, mistaken for a tumour which we have supposed was of the same nature. In the case of contraction of the pyramidalis, we inferred its connection with intermittent, because it had supervened upon an attack of fever, and was itself of an intermittent character. The "globus hystericus," we think, is a case of the same kind. These spasms may be temporary, and pass off without any more serious disease, or they may become permanent in some muscle. Thus we may suppose to originate the torticollis or wry-neck.

Another symptom which we have known to replace the rigor, is a spasmodic cough. We have seen several cases, in which this cough always preceded the exacerbation of fever. The spasm or convulsion here was most probably confined to the diaphragm alone. An interesting and instructive case, where this cough seemed to be the chief disease, has been recorded

by M. Bricheteau,* in the "Journal Complimentaire." The disease was intermittent and cured by quinine. Dr. McCulloch thinks, and with great probability, that a form of pertussis or whooping-cough may be symptomatic of marsh fever. Sometimes the convulsion may affect the heart alone, giving rise to palpitation. It is very certain that this affection may exist for a long time without any organic affection, and the case which is given by Dr. McCulloch,† in which the palpitation alternated with neuralgia and quotidian *intermittent*, renders it highly probable that it is sometimes a substitute for this fever.

There is more ground, however, for believing that a form of asthma may replace the rigor in which the respiratory muscles are the seat of the convulsion. Dr. McCulloch notices a case related by Strack, which he considers was of this nature. Dr. Combes‡ has given a case of this kind in his own person, and Dr. Simon has related three cases, in each of which a cure was effected by the use of quinine. The periodic nature of asthma, which is not organic, and the fact that the best mode of preventing a recurrence of the paroxysm, is the use of the remedies for intermittent fever, prove almost conclusively that it is isopathic with it, and may become a substitute for it.

We have one word to say in relation to hiccup. In the Journal des Connaiss., Med. Chir., a case is given of this affection in a man "while recovering from an attack of ague." A variety of antispasmodics and other remedies were used without effect. At length suspecting that, although all the other symptoms of the ague had ceased for some time, this convulsive affection of the stomach might somehow be connected with it, the medical attendant administered a large dose of quinine in an enema. A few hours after it was given, the hiccup ceased almost entirely, but it again returned as violent as before, next day. The quinine was again ordered, and with equally happy effects; and by persevering in its use for a few days, the symptoms did not return."§

Another part in which this spasm or convulsion shows itself, is in one or more of the intercostals, producing the affection known as pleuralgia or stitch in the side. It appears to me that the pathology of this affection has been most wonderfully mistaken. It has always been regarded as rheumatism, and is so considered even by Dr. McCulloch. But the suddenness of the attacks and the accompanying symptoms sufficiently indicate its true *spasmodic* character. Pleurodynia has often been confounded with true pleuritis, and, from incorrect treatment, no doubt passes into a form of pleurisy, whose termination is in effusion of serum, and, if the patient recovers, that "contraction of the chest," which is noticed by Laennec,‖ attends him through the remainder of life. "The greater number of individuals," says

* Med. Chir. Rev. 23d, 217.
† Op. cit. page 166.
‡ Med. Chir. Rev. 43d, 220.
§ Ibid. 40th, 192.
‖ Treatise on Diseases of the Chest, translated by Forbes, p. 131.

Laennec, "in whom I have detected this deformity, attributed it to some severe and long-continued disease of the chest, the *exact character of which had never been ascertained.*" Spasm of the intercostals is a very common affection among the negroes in our climate, and the pain in the side is often the chief and most distressing symptom, the febrile excitement being, in most cases, obscure, although we believe invariably succeeding. That it is often merely a symptom of intermittent, we have no doubt, although, in the language of McCulloch,* "having stated this common fact, I am not of course about to maintain that every pain in the side belongs to this fever, but I have seen cases where there could be no question on that subject, and where the most serious evils have followed the erroneous view and the wrong practice." We conclude what we have to say upon this point of our subject, by offering the suggestion that, in cases where this muscular spasm becomes extreme, it offers that form of disease known as *pleurosthotonos* or *tetanus lateralis.*

And this brings us to the consideration of that general *spasmodic disease* whose pathology has been badly understood, but which we have very little doubt is often intimately connected with the *cold stage of intermittents.* Storck mentions tetanus proceeding from fever.† Dr. Rush‡ says, that tetanus is sometimes a symptom of bilious remittent or intermittent fever, and that it may be cured by the same remedies. In speaking of the influence of an epidemic over other diseases, he says, "that yellow fever sometimes puts on the form of tetanus." He afterwards mentions two cases which he witnessed, occurring in yellow fever, one of which was general. Dr. Caldwell,§ in a note under the head of tetanus, in Cullen's First Lines, mentions a variety or modification of tetanus, which assumes an intermittent character; and he says, "he does not recollect to have seen a case of tetanus in which the patient was free from febrile action." But by far the most interesting case of this kind which has come to my knowledge, is given by M. Dance,‖ in a memoir published by him in the "Archives Générales," in which the tetanus assumed the intermittent type, and the accompanying fever had the characters of the infantile remittent, and sometimes the form of an almost regular intermittent, so much so that M. Dance was inclined to view the "muscular affection as a form hitherto unknown, of intermittent disease caused by miasmatic influence."

We have not had many opportunities of observing this disease, and therefore must speak with caution, but we think that in two cases which have come under our notice, the tetanus appeared to be connected with our climate fever. Occurring at the same season, assuming, sometimes, the same intermitting type, and having the same remitting or intermitting fever, and cured often by the same remedies, it appears to me difficult to resist the

* Op. cit.

† Parr's Med. Dict. *Art.* Tetanus.

‡ Inquiries and Observations, 1st, 252.

§ Caldwell's Cullen, vol. 2d, 143. 145.

‖ Med. Chir. Rev. 29th, 505.

conclusion, that it may replace the *rigor of the cold stage of intermittents*, and this seems true even of the traumatic variety, for it is plainly evident that *no wound* can of itself bring on the disease, without the concurrence of other more important causes; but let it be here, as elsewhere, borne in mind, that two diseases may be entirely *isotypic* without being *isopathic*, and, therefore, that remedies which would be useful in one, may be useless or hurtful in the other.

There are two other modes in which the rigor may manifest itself, which we will mention in connection. These are first, by a spasm of the muscular coat of the bowels, producing a form of colic, and in the other the convulsion is confined to the diaphragm and abdominal muscles, giving rise to vomiting. We have witnessed these symptoms sufficiently often to have satisfied ourselves that they often replace the rigor. They are common attendants upon our climate fevers, and I fear have often been mistaken for gastritis and enteritis, and *thus improperly treated.* I have seen both these symptoms (pain in the bowels and vomiting,) come on regularly at certain periods of the day, always presaging and preceding the rise or exacerbation of fever, so as to make mistake in regard to the position they occupy among the symptoms of the disease impossible. Dr. McCulloch says, "It is not unusual for nausea or vomiting to come on before the period of fever is finished, and *far more generally in the cold fit*, which it sometimes terminates, and, as I shall show more particularly hereafter, when the symptom is conspicuous compared to others, there is produced a variety (of fever) to which the term emetica has been applied," (p. 124;) and again, "I have already remarked, that the ordinary paroxysm of an intermittent sometimes terminates in vomiting, whilst nausea also occurs in them as in the chronic remittent, often very durable, and forming a distressing addition to the other symptoms." Sometimes the vomiting "becomes the most conspicuous symptom, or even the only one which the patient may notice; when inattentive practitioners are subject to mistake it for an original disease, dependent on some mysterious cause, or to assign a wrong one for it." (P. 165.)

Passing over some other local affections of a more questionable nature, the last which we shall mention under this head is convulsion. This symptom in children is often a substitute for rigor; indeed, I lay it down as a rule, that *the rigor of an adult is the convulsion of a child in our climate fevers.* Children under five years of age never, according to my observation, have a rigor in any other form, and so certain am I of its identity, that I have been able to predict the probable time of its occurrence forty-eight hours beforehand, and the result has verified my prediction. The danger from a convulsion is not in proportion to its violence, but only as an indication of a disposition to a *false crisis.* If *the skin and kidneys act freely*, the succeeding fever is generally mild. Convulsions preceding or accompanying fevers have often been noticed. Dr. McCulloch speaks of them, and in an account of the autumnal fevers of Amsterdam, during the year

1834, by Dr. Nieuwenhuys,* published among the transactions of the Provincial Medical and Surgical Association, they are mentioned as occurring in children at the commencement of the fever. But a more interesting and proper place among the symptoms of fever, has been assigned to them by Dr. Moliere,† in a paper "on intermittent affections with short periods," published in the "Mémoires de l'Academie de Médécine." He says in relation to them, "at present, whenever I am called to an infant afflicted with convulsions, which *are not clearly symptomatic*, if these occur, as is usually the case, by crisis or attacks, separated by longer or shorter intervals of repose, I look upon the affection as an intermittent, and whether the interval consists of but one or of several hours, I give the quinine, and I can declare that I have often been enabled to arrest the disease in the most ready and unhoped for manner." Similar observations, it appears, have been made by MM. Piorry and De Lens, who also recommend the employment of quinine. There is reason for believing that even in adults the rigor may sometimes assume the violent form known as epilepsy. This has been suggested by Dr. McCulloch, and I know of one case which seems to corroborate this view—but I do not wish to cumber these remarks by a detail of cases. It appears probable that the positive forms of hysteria might be robbed of half their mysterious character, by studying them in connection with intermittent fevers. We conclude what we have to say under this head, by proposing the following question, whether the diseases of children, known as laryngismus stridulus and thymic asthma, may not be a modification of the rigor of intermittents?

Critical symptoms.—We come now to a more questionable mode of exhibition on the part of this fever, and yet it appears to me probable that it is among the most common in our climate. I am inclined to apply the remark of Celsus on another subject to intermittents, that "nusquam non est," or in other words, that intermittents and remittents, although, perhaps, more common during the hot seasons of the year, are not confined to them exclusively, but *that the fevers of summer become the phlegmasiæ of winter.* The most usual mode of termination of a paroxysm of intermittent and remittent, is by perspiration or diuresis. If from any cause these enunctories refuse to act, then a "*false crisis*" takes place, and the internal organs suffer by what may be called a transfer of function, giving rise to local affections known as inflammations. Their connection with the "marsh fever," however, may be made apparent by considering the epidemic constitution of the air, the passage from this fever to those local diseases, and the tertian or double tertian type of the accompanying fever. Let us not be understood as saying that all local diseases are of this character; by no means—but there are many local determinations which are of this kind. The particular points at which these determinations may take place, are

* Med. Chir. Rev. 29th, 132. † Ibid. 43d, 301.

often indicated by the previous symptoms, such as the neuralgic pains and the convulsive actions which replace the rigor. To these determinations we would not apply the term inflammation, because, as we shall hereafter define the term, it would be inappropriate, although, under its ordinary acceptation, they are inflammatory; but there is a most important difference in a therapeutical point of view, for in one the local affection may be removed by means which would aggravate it in the other. Dr. McCulloch* says, "in remittent fever there may be present inflammation of the brain, of the lungs, of the pleura, of the throat, (anginæ of different characters,) of the bronchial membrane, (catarrhs,) of the stomach, the intestines, the liver, the spleen, the peritoneum, of internal organs or viscera, and also of the muscles and ligaments, (rheumatism,) all of them varying in their intensities in whole epidemics, as in individuals, and thus at one extreme producing cases, which, under peculiar characters also in the essential fever, may simulate or almost equal cases of phrenitis, pleuritis, &c., calling for material variations in practice, and not unfrequently becoming grounds of most inconvenient disputes among physicians not sufficiently aware of *the nature of what they had not witnessed.*" To me it appears evident, that many diseases attended with local heat, redness and tumefaction, have been included under the term inflammation, which are pathologically very distinct species, as we hope to point out when treating of the inflammatory types, and that one type or form of this local affection is isopathic with intermittent fever. Such, we have reason to believe, is the case with many catarrhal affections, including, probably, the epidemic form of influenza, and each some of the forms of *dysentery* and *diarrhœa*—which last Dr. Johnson considers to be a real catarrh of the *mucous membrane of the bowels.*

In corroboration of these general views I cannot deny myself the pleasure of transcribing the following remark from the "*Gazette Médicale.*"† "It is not, however, to be denied that these local affections of one of the great cavities are not unfrequently altogether dependent upon an aguish cause, and are to be treated on the same principles as intermittent fevers; in other cases they are to be considered as inflammatory or congestive complications of the febrile attack, and will require *topical* or even general depletion. Let not the physician, however, dream of treating these local complications as if they were *primary* or *idiopathic.* This was the cause of the frightful mortality among the sick in Algeria, for the first two or three years after our occupation of that country. The surgeons thought that they had to treat *gastro-cephalitis*, and resorted to the use of antiphlogistic remedies, whereas, all the while the disease demanded the exhibition of bark and other tonics. It has been chiefly to the skill and sagacity of M. Maillot, that we are indebted for this important discovery."

We recollect one case of catarrhal fever which has convinced us of the alliance of this disease with intermittent. It was attended with severe

* Op. cit. p. 139. † Med. Chir. Rev. 42d, 222.

pain over the eyes and in these organs which was of an intermittent character, coming on every morning about 9 o'clock, and attended with high fever. The patient was largely bled and purged without relief, when the use of quinine for twelve hours put a complete stop to the disease.

There is abundant evidence to establish the intimate relation that exists between this fever and one of the forms of dysentery. Dysentery, however, like all other local affections, is of as many species as the essential disease which gives birth to it. Thus the diarrhœa and dysentery which prevailed at the Mill-bank prison in 1822, according to Latham and Roget,* was nothing more than a "*symptom of scurvy*," but we now speak of that form that has a remittent type, and prevails at the same time with this form of fever.

Sydenham and Mosely both believed that dysentery was a fever turned in upon the bowels, and many later writers have adopted the same conclusion. Dr. Rush† often remarked dysentery as a symptom of bilious remittent fever. "I took notice," says he, "in the history of this fever, that it was sometimes accompanied with symptoms of a dysentery. Where this disease appeared, I prescribed lenient purges and opiates; where these failed of success, I gave the bark in the intermissions of the pain in the bowels, and applied blisters to the wrists. The good effect of these remedies led me to conclude that the dysentery was the "febris introversa" of Dr. Sydenham. Dr. Parr says, "In fact it is a contagious remittent fever, with erysipelatous inflammation of the mucous coat of the bowels." The most conclusive evidence upon this point, however, is furnished by Dr. Cheyne‡ in his report of the Whitworth Hospital, containing an account of the dysentery that prevailed in Dublin in the year 1818. He says, "It was observable that dysentery frequently occurred at that period of recovery from fever, when there seemed the greatest liability among the convalescents to relapse. Dysentery, whether its connection with fever could be traced or not, often commenced with a rigor and terminated in free perspiration; it was sometimes converted into a fever, while, on the other hand, fever was frequently converted into dysentery, and lastly, during convalescence from dysentery, several persons sustained an attack of fever; in short, these forms of disease were convertible the one into the other, so that the opinion of Sydenham, that dysentery was a 'febris introversa,' received support from our observations."

Dr. Johnson§ has advanced a similar opinion, and considers dysentery to be a local affection depending upon the fever with which the patient was just attacked. In the "Statistical Reports of the Health of the Navy‖ for the years 1830—6 inclusive," in the British service, in speaking of the diseases of the African station, the reporter states, that the most formidable

* Monthly Jour. 2d, 205. † Op. cit. vol. 1st, p. 130.

‡ Monthly Jour. 1st, 108, and Good's Study of Med. vol. 2d.

§ On Liver. ‖ Med. Chir. Rev. 40th, 360.

enemies of the European constitution were the bowel-complaints. "These included diarrhœa, dysentery, enteritis, *all closely allied affections*, one often *running into the other* so *insidiously* and by *movements* so difficult to observe, that it was impossible to decide the exact limits of each, though there was great difference between their extreme points, diarrhœa being one of the most trivial, and acute dysentery one of the most dangerous affections to which seamen are subject." These local affections had all been preceded by the "African remittent," lately so well described by Drs. McWilliam* and Pritchett, which was so disastrous to the officers and men engaged in the expedition to the Niger, and in which these same sequences are mentioned. In this fever the intermittent was also a "common sequence," which led Dr. McWilliam to believe that "*the same cause acting in different degrees of intensity gave rise to both these forms of the fever.*"

Cholera morbus, when not brought on by acrid or poisonous ingesta, is another affection closely allied if not identical with bilious remittent fever; but not to prolong our remarks, we will conclude what we have to say in regard to these local diseases, by the following quotation from Dr. McCulloch:—"Another analogy in confirmation of the same views is found in the character of the bilious remittent, and very especially in those where the affections of this system, (biliary,) forms a conspicuous part of the disease. Such is notedly the usual fever of Walcheren, known in the country by the name of gall disease, and such, I need not say, are the still more noted yellow fevers in many cases. In all such instances, though with various modifications, we may consider the disease *as a fever with cholera*, or a mixture of the two, while as the one or the other may predominate, the character of the disorder or the case varies; or, with the general action on the nervous system generating pure fever, there is a local one on the *liver productive of cholera*, just as occurs with respect *to dysentery*, or as also happens in the much less serious disorders of this great class, where a neuralgia may be accompanied by a perfect and marked intermittent, or where that may be insensible."†

We proceed now to the most difficult part of our subject, which is to point out the relations which exist between the fever which we have been considering and the other forms of essential fevers, and this we will do with as *much brevity* as possible.

We have admitted three distinct species of essential fevers, viz: the intermittent, remittent, or "marsh fever," the synocha, cauma, or inflammatory fever and the typhus, and these are all that I can make out among the admitted essential fevers of authors. The inflammatory fever will come under consideration when treating of the *inflammatory types*. The typhus we will consider with Hildebrand and others, as one among the specific exanthems propagated by a specific poison, and belongs to the *exanthematous types*, where we will also refer the typhoid or dothinenterite of the French.

* Am. Jour. Med. Sci., N. S., vol. 7th, 387. † Op. cit. p. 119.

These fevers can have no specific connection with one another, being pathologically distinct diseases,—but it remains to inquire whether the intermittent or remittent may not, under peculiar circumstances, assume a form so nearly or completely isotyptic as to be confounded with them.

In order to proceed correctly, let us endeavour, first, to find out those features by which fevers may be distinguished, and our first remark here is, that they cannot be certainly distinguished by the type of the paroxysms, as has been attempted by some authors, for it is very certain that the intermittent may pass into the remittent, and this last into the continued without any change in the specific character of the fever. Dr. Cullen* recognized a continued form of intermittents, and points out how it may be distinguished from other continued fevers of a different character. Dr. Good says,† "in many attacks (of fever) we see different individuals *touched by the very same influence*, exhibit all the varieties now alluded to, and intermittent, remittent and *continued* fevers, co-existing in every diversity of violence, commencing with either of these forms, keeping tone to the form with which they commenced, or changing one form for another. Such as remarked by Deveze, was the course of the fever in Philadelphia, in 1793; such, according to M. Berthe, was that of the southern provinces of Spain in 1800, and such was particularly the case in the highly malignant yellow fever of Antigua in 1816, as described by Dr. Musgrave. Such, also, as we have seen, was the character of the fevers of Algeria, as described by M. Maillot.

Again, the specific character of a fever can never be determined by what is known as a putrescent or putrid state of the blood—a state so well described by Schwenk and Hasam, many years ago, and which has received more importance of late by the light which has been thrown upon it by the observations of Magendie, Andral and others.‡ Dr. Cullen§ says, "from the dissolved state of the blood, as it presents itself when drawn out of the veins, or as it appears from the red blood being disposed to be effused and run off by various outlets, and from several other symptoms to be hereafter mentioned, I have no doubt, how much soever it has been disputed by some ingenious men, that a putrescency of the fluids, to a certain degree, does really take place in many cases of fever. This putrescency, however, often attends *intermittent* as well as *continued fevers*, and of *the continued kind*, both the synochus and typhus, and all of them in very different degrees; so that whatever attention it may deserve in practice, *there is no fixing such limits to it* as to admit of establishing a species under the title of "*putrid.*" Dr. Hunter‖ says, "the putrid fever, (as it is called,) is, perhaps, no more than the inflammatory, upon a constitution that has a peculiarity of action under that disturbance, and, therefore, it proceeds according to that pecu-

* First Lines, vol. 1st, p. 97. † Study of Med. vol. 2d, 48.

‡ Vide Magendie sur Le Sang and Andral on Blood in Disease, translated by Meigs and Stillé.

§ Op. cit. p. 130. ‖ On the Blood, 1st, 247.

liarity. This is well illustrated in specific diseases, for instance, in the small-pox. The small-pox produces a fever, viz., a disturbed action joined with the specific, and although the action is produced by the same poison in two different persons, yet the one shall be truly inflammatory, the other *the putrid*, the erysipelatous, &c." Andral mentions the same connection of scarlatina and small-pox, and so does Dr. Roupell,* in his "Essay on Typhus," in which he says, "these signs, therefore, may be called *accidental and common to a variety of specific diseases.*"

Since, then, this state, as we have said before, is common to most diseases, it cannot be considered a specific feature in fever, and the same may be said of those *petechial eruptions* which appear during the course of many malignant fevers, and which are only symptomatic of that hemorrhagic tendency depending upon this very dissolved or incoagulable state of the blood, and seem to bear the same relation to this peculiar condition of the blood, which bullar eruptions may be supposed to hold to the hydroæmic state of this fluid.†

Upon this condition of the blood, no doubt depend, in a great measure, those adynamic, ataxic and putrid symptoms which, when primary, have given rise to as many different designations of fevers, and when arising during the progress of the attack, to the fever known by the name of synochus—names which really apply to a *certain state of a fever which is not understood.*

These things being so, then, it can readily be perceived how "marsh fever" originating in a system brought into this condition by unwholesome food, ill ventilated apartments, &c., may assume an adynamic and continued form, which would cause it to be confounded with typhus, instances of which can be found in the writings of different authors. Whoever will consider attentively the different forms of typhus described by Armstrong,‡ cannot fail to see, I think, that he has ranked under that name fevers which do not belong to it. Dr. Good§ has his "Epanitus Autumnalis Malignus," which might readily be considered true typhus. The fever described by Dr. Nieuwenhuys,‖ at Amsterdam, although no doubt the marsh fever, he has called "typhus remittent." In Geneva, Dr. Lombard¶ has employed bark and quinine with advantage in a form of typhus, which, no doubt, was isopathic with intermittent. M. Bally** describes a typhoid type of fever succeeding intermittents and cured by quinine, evidently showing the connection, and Dr. Mackenzie†† has lately described an epidemic remittent fever which occurred at Glasgow, which was attended by an eruption of

* Med. Chir. Rev. 35th, 97.

† These conditions of the blood I hope to notice more particularly hereafter.

‡ Practical Illustrations of Typhus, by John Armstrong.

§ Op. cit. 2d, 99.

‖ See paper above referred to.

¶ Med. Chir. Rev. 35th, 541.

** Am. Jour. Med. Sci., vol. 1st, O. S. 434.

†† Ibid. N. S. 7th, 450.

petechiæ and other malignant typhoidal symptoms. In support of this view, I will introduce the following extract from a paper "on the distinction between typhus fever and dothinenterie," read by Dr. Barlow before the Parisian Medical Society.* "It is to be remarked, that the mesenteric fevers of Rome described by Baglivi, though continuous, are allied to the remittent type; that the morbus mucosus of Roederer and Wagler, which occurred at Gottingen in 1761, and which agrees with the third form of typhoid fever specified by M. Chomel, made a near approach to the hemitriteus or semitertian remittent, and that it was preceded and followed by agues and assumed, during its course, an intermittent character. The bilious pituitous fever of Schroeder also showed a remittent form; and the gastric fever occurring at Vienna betrays the same character. In some parts of Germany, on the contrary, the symptoms which *this fever* presents, have caused it to be referred to the head of typhus, under the name of *abdominal intestinal typhus.*"

As intermittent, then, may be connected with that condition of the blood which forms the basis of the scorbutic or hemorrhagic types of disease, so we may suppose it possible it may enter as a complication into almost all the other types, without, however, altering always their character in a therapeutic point of view, for, in such cases, the cure of the intermittent is not a cure of the original disease. Thus, for illustration, phthisis is a specific disease, very different from intermittent fever, yet the hectic fever is of an intermittent character, having a tuberculous or scrofulous origin. The proper treatment of hectic is that of intermittents, but not always of consumption.

The question then comes up, how may fevers be distinguished? Were it possible to ascertain what has been called the proximate cause of disease, the distinction would be easy, but, as Dr. Johnson has well remarked, so far as we yet know, there is no proximate cause to any disease, but every disease seems to consist in a "series of causes and effects." We have then to come to a knowledge of the nature of diseases approximatively, or by considering those circumstances connected with them, which may develop their true character, and I think all the necessary conditions of the problem will be found in *the remote* or *exciting causes* so far as *we can know them*, the *epidemic constitution of the season*, or *prevailing habit of diseases*; the *peculiar and specific changes in the blood and other fluids*, the *antagonism and coincidence of certain diseases as lately noticed* by some French physicians, and above all, that feature of diseases which we have been examining, viz., *their mutual convertibility.*

We have a word or two to say in relation to yellow and congestive fevers. We have had no opportunity of observing properly the former disease, but if the observation of Rush, Bancroft, Frank, Good, Craigie and others may

* Ibid. 26th, 461.

be depended on, it is identical with the intermittent and remittent fever, and we refer to these writers for the arguments in support of this view.

The fever known as congestive has assumed a great degree of interest of late from its ravages in some parts of our country, particularly at the west. This fever sometimes occurs among us,* and from my own observation, I am clearly of opinion that it is nothing more than a form of the cold stage of intermittents, and this view seems to be supported by the remark of Dr. Parry, of Indianapolis, and Wharton, of Grand Gulf, Miss.† Dr. Wharton pointedly says, "there *is some analogy between the cold stage of an intermittent and the state of the system in congestion; the difference consisting in the greater and more permanent capillary torpor which exists in congestive fever.*" It evidently, therefore, should not be considered a distinct fever, but properly comes under the head of symptoms of depression or sedation of intermittents.

Liberty County, Geo., July 1st, 1844.

ART. VI.—*Statistics of the Causes of Death in the Philadelphia Hospital, Blockley, during a period of twelve years.* By JOHN PROSSER TABB, M. D., of Gloucester Co., Va.‡

THE statistical mode of investigation, now so generally employed in the study of disease in various aspects, is certainly that most applicable to the subject of our present inquiry. It can, indeed, be in no other way approached than by conclusions drawn with proper discrimination from large bodies of authenticated facts. Such a body of facts has been furnished by the records of the Philadelphia Hospital, Blockley, all of which, embracing a period of twelve years, I have examined, and I believe that they will not only include all the causes of death which have existed there, but those also which are common to this climate;—for, in an establishment, one of the most extensive in the world, where, during this time, upwards of 30,000 cases have been treated, in the immediate vicinity of a populous city, affording a refuge to all its poor, containing a population of its own amounting to 1700, I think it would not be presuming too far to expect one of each class of our fatal diseases. They have been divided as follows:

* In 1842 I saw a case of this fever in a foreigner, in which he discharged from his stomach and bowels before death, a fluid in every way similar to "black vomit." In 1840, I attended several cases, in one of which, after death, there was a discharge of black fluid blood from the mouth and nose. This was told to me, however, by others.

† See their papers in Am. Journ. Med. Sciences, vol. 5th, N. S. 28, and 7th, N. S. 339.

‡ This paper was presented as an inaugural thesis to the faculty of Jefferson Medical College.

I. Diseases of the Brain and Spinal Marrow.
II. Diseases of the Respiratory Organs.
III. Diseases of the Heart.
IV. Diseases of the Alimentary Canal and Abdominal Viscera.
V. Diseases of Nutrition.
VI. Cachexia and diseases of uncertain seat.
VII. Fevers and Exanthemata.
VIII. Diseases of Women and Lying-in-room.
IX. Diseases, Surgical.
X. Diseases which could not be conveniently included under other heads.

In this classification I have had in view rather the organ attacked than the nature of the affection.

* TABLE I.

Diseases of Brain and Spinal Marrow.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100	Unknown.	Male.	Female.	Total.
Cerebritis,	6	5	3	5	5	5	5	5	4	0	5	9	9	4	3	5	12	7	7	7	6	2	0	0	3	39	26	65
Meningitis and Arachnitis,	1	3	4	6	1	5	31	18	9	13	14	7	28	9	7	2	22	21	9	4	4	6	0	1	1	62	45	107
Softening of Brain,	0	0	3	0	1	7	4	2	2	0	0	2	0	0	0	0	2	4	1	4	5	7	4	0	0	18	12	30
Abscess of Brain,	1	0	0	3	4	0	4	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Irritation of Brain,	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	8
Hydrocephalus,	4	2	3	4	4	0	4	4	1	7	2	4	15	1	0	0	0	1	0	0	0	0	0	0	0	21	15	36
Effusion on Brain,	1	0	1	1	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	13	4	17
Tumour on Brain,	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2
Congestion,	2	1	1	4	2	2	7	1	3	4	3	3	2	1	0	0	0	0	0	0	0	0	0	0	1	16	5	21
Apoplexy,	7	4	4	1	2	0	1	1	3	4	4	4	3	1	0	0	1	2	4	2	2	1	0	0	0	51	38	89
Hemiplegia,	0	6	1	1	5	1	3	2	2	0	3	4	0	0	0	0	2	2	1	1	2	2	0	0	0	9	2	11
Paralysis,	4	6	1	1	7	8	3	2	1	0	3	6	4	0	0	1	8	3	11	1	4	7	3	0	0	25	13	38
Mania,	16	5	1	7	8	3	2	1	1	0	5	5	3	0	0	0	2	3	9	4	5	4	2	0	0	23	24	47
Mania a-Potu,	75	43	60	19	24	43	16	13	4	3	5	2	3	0	0	0	67	113	74	32	8	2	0	0	16	242	71	313
Intoxication,	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2
Convulsions,	15	3	6	1	1	3	3	2	7	2	1	7	34	10	3	0	3	8	4	0	2	2	0	0	0	35	26	61
Epilepsy,	5	3	2	4	3	1	1	2	2	5	3	2	0	1	0	0	4	9	3	5	2	1	0	0	0	13	20	33
Tetanus,	3	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	1	0	0	0	0	6	2	8
Chorea,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Cataleptic Hysteria,	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Inflammation of Spinal Marrow,	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Spinal Disease,	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Spinal Apoplexy,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Softening of Spinal Marrow,	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	2
Myelitis,	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concussion of Spinal Marrow,	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
Neuralgia,	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Lead Palsy,	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
Total,	143	76	93	78	80	87	83	56	49	52	41	62	92	43	19	14	146	213	140	78	72	43	16	2	27	590	315	905

* This, as well as every other table of this paper, begins August 1, 1831, and ends August 1st, 1843. The figures in the first line show the deaths to August 1832, those of the second to August 1833, and so on.

Class I.—The diseases of the brain and spinal marrow, (see Table I.) it will be perceived, bear a much larger proportion to the whole number than is generally supposed; thus, the proportion is as 1 to 5·5; whereas, in England, in 1840, it amounted only to 1 to 7·1.

The greater liability of the male sex to diseases of this class is worthy of notice, the proportion, as reported by the Registrar-General of England, being 23·236 to 19·625, and here it is as 1·8 to 1, for which the existing state of society will sufficiently account.

The diminution in the number of cases of *mania à potu* is striking, in the first six years there being two hundred and sixty-four deaths, while in the second half of the series there are but forty-nine. This striking disproportion is probably to be accounted for by the change in habits induced by the progression of temperance. The admissions now are by no means as frequent as formerly, and very rarely advance to the third stage of this disease.

On the authority of Dr. Gerhard, I may state that the treatment in the men's department until the year 1837 had been by opiates, and that the number of deaths to those admitted, had been in the proportion of 1 to 10. He then tried stimulation by alcohol, and we have this result:

	Admitted.	Cured.	Died.
Intoxication,	61	61	0
Delirium Tremens, 1st stage,	87	87	0
" " 2d "	73	73	0
" " 3d "	2	1	1

"The fatal case died a few hours after his entrance, and had been treated by opium in the city." But that this stimulant is not required, I give the report of Dr. Dunglison, who has charge of the Women's Asylum for six months of the year. He "used not a drop of alcoholic liquor." His course "has been entirely eclectic, in many cases expectant," and in its support we have the following:

	Admitted.	Cured.	Died.
Intoxication,	44	44	0
Delirium Tremens, 1st stage,	55	55	0
" " 2d "	19	19	0
" " 3d "	10	9	1

"which last died on the morning after admission, and had been treated elsewhere for nearly a week."

Before concluding this order, I must call attention to the much greater fatality of diseases of this class, during the first year, even though we exclude mania-à-potu, and suggest as a cause, the influence of intemperance in their development, even when not carried to such extent as to cause *delirium tremens*.

TABLE II.

Disease of Respiratory Organs.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Pneumonia,	30	10	14	10	18	30	21	27	21	13	22	19	34	22	4	8	49	45	33	19	17	7	3	0	3	158	77	235
Gangrene of Lung,	1	0	0	0	5	4	6	2	4	0	5	0	0	1	0	1	3	2	7	2	2	1	1	0	0	20	7	27
Abscess of Lung,	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	2	3
Pneumo-hepatic Abscess,	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
Congestion,	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	4	0	4
Bronchitis,	19	3	8	13	4	0	5	5	6	2	4	4	14	12	0	1	4	8	8	6	7	10	1	1	1	49	24	73
Pleurisy,	2	0	1	1	4	4	2	2	2	1	2	2	3	0	0	0	5	4	3	1	5	1	0	0	0	16	6	22
Apoplexy of Lung,	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Empyema,	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	2
Emphysema,	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	2
Pneumo-thorax,	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	5	0	5
Hæmoptysis,	0	2	0	0	0	3	1	1	0	0	0	1	0	0	1	0	1	2	3	0	0	0	1	0	0	6	2	8
Pectoral Affection,	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	3	0	3
Effusion into Bronchi,	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	3	1	4
Asthma,	3	1	2	1	1	1	0	0	0	0	0	2	0	0	0	0	0	1	1	2	2	1	4	0	1	5	6	11
Pertussis,	0	0	0	0	1	1	1	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	2	1	3
Croup,	2	8	0	4	1	2	1	1	0	0	0	1	12	3	3	0	2	0	0	0	0	0	0	0	0	13	7	20
Laryngitis and Pharyngitis,	0	0	4	3	0	0	1	0	4	0	1	1	0	0	0	0	4	5	1	2	0	1	0	0	1	8	6	14
Spasm of Glottis,	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total,	62	25	35	37	34	45	38	39	38	20	34	32	65	38	9	12	65	82	64	33	32	26	5	3	5	299	140	439

CLASS II.—This embraces diseases of the respiratory organs, among which pneumonia holds the most prominent place, exceeding the sum of all the others. From other statistics, I find that it occurs more frequently in April than in any other month, but is more fatal in December and January. Children are its especial victims, one-fourth of the fatal cases occurring under the fifth year; but in this respect the proportion is exceeded by bronchitis, where we find it more than a third. Of this latter disease, March gives the greatest number of deaths, and September but one, which was a case of true *bronchitis senilis*.

For spontaneous bronchial inflammation occurring independent of cold, of which there are about six or eight cases, no special place has been reserved, but they have been classed under the general head of bronchitis.

TABLE III.

Diseases of the Heart.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Disease of Heart,	1	1	3	8	10	18	10	12	4	5	12	3	0	0	0	1	18	18	11	14	11	10	2	2	0	50	37	87
Hypertrophy,	1	0	0	3	5	1	1	1	5	5	3	0	0	0	1	1	4	5	2	3	3	6	0	0	0	13	12	25
Dilatation,	0	0	1	1	4	2	0	0	0	0	0	0	0	0	0	0	3	0	1	1	0	2	1	0	0	3	5	8
Aneurism of Heart,	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Carditis,	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	20
Pericarditis,	1	3	0	2	4	1	0	0	0	4	3	2	2	0	0	1	4	3	8	0	1	1	0	0	0	14	6	8
Endocarditis,	0	0	0	0	0	0	0	1	2	2	3	0	0	0	0	0	5	1	2	0	0	0	0	0	0	4	4	6
Endopericarditis,	0	0	0	0	0	0	0	1	0	0	3	2	0	0	0	1	2	1	2	0	0	0	0	0	0	6	0	1
Aortitis,	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	12
Aneurism of Aorta,	1	0	1	2	2	1	1	0	2	0	1	1	0	0	0	0	0	5	4	2	0	0	0	0	1	10	2	1
Aneurism on Pulmonary Artery,	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Phlebitis,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
Hydrothorax,	6	3	9	2	2	0	4	1	2	0	1	0	0	0	0	0	3	7	6	6	7	0	1	0	0	19	11	30
Total,	10	9	14	19	27	24	16	16	15	17	26	8	2	0	1	4	39	43	36	27	22	19	4	3	1	123	78	201

CLASS III.—I have little to say on heart affections, which are placed in table third, except that I do not see the increase here which has been noticed elsewhere, the first six years showing more deaths than the last; which fact inclines me to doubt the correctness of Mr. Farr's inferences. I think that the increase is rather apparent than real, and may be attributed to the more advanced state of the science of physical exploration, by which diseases of this nature may be more readily detected.

TABLE IV.

Diseases of Alimentary Canal.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Aphthæ,	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Ptyalism,	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	2
Cancrum Oris,	0	0	1	12	1	1	4	1	2	1	1	0	1	13	7	0	1	1	0	1	0	0	0	0	0	14	10	24
Tonsilitis,	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	0	2
Ulcerated Sore Throat,	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Gangrenous Sore Throat,	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Stricture of Œsophagus,	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Gastritis,	4	4	2	1	1	0	1	6	4	2	5	3	1	0	0	1	2	7	3	6	3	2	0	0	1	16	17	33
Hæmatemesis,	2	0	1	1	0	0	0	1	0	1	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	6	0	6
Gastro-enteritis,	3	8	17	9	1	0	5	3	2	0	4	6	8	8	0	2	6	8	5	7	4	5	5	0	0	30	28	58
Enteritis,	0	4	2	8	5	1	2	1	1	0	0	0	7	1	1	0	2	6	3	1	0	0	1	0	2	14	10	24
Chronic Visceral Affection,	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
Diarrhœa,	14	2	7	30	31	31	4	12	16	8	5	2	14	12	2	2	22	27	19	23	16	17	5	2	1	88	74	162
Dysentery,	25	2	13	13	11	23	26	10	30	31	51	42	15	7	4	8	33	47	60	37	22	33	12	0	0	187	94	281
Cholera Morbus,	1	2	0	4	0	0	2	0	1	0	0	0	0	0	0	0	0	1	5	1	1	1	1	0	0	5	5	10
" Infantum,	8	2	6	7	2	8	6	5	4	4	3	2	47	10	0	0	0	0	0	0	0	0	0	0	0	24	33	57
" Asiatica,	5	85	0	8	1	0	0	0	0	0	0	0	0	1	2	6	15	17	9	19	12	11	5	2	0	51	48	99
Ileus,	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0	2
Colica Pictonum,	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	2
Intussusception,	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0	2
Worms,	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	2
Peritonitis,	3	3	2	0	4	4	7	0	6	3	11	7	8	0	0	3	8	14	7	4	2	1	1	0	2	30	20	50
Dropsy,	21	11	7	6	13	9	4	9	10	21	5	9	0	0	2	4	28	28	26	16	13	5	2	0	1	86	39	125
Anasarca,	1	3	2	0	0	0	1	0	2	0	0	0	0	0	0	0	1	1	3	2	0	2	0	0	0	5	4	9
Splenitis,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Disease of Liver,	0	0	0	0	2	11	3	2	0	0	2	0	0	0	0	0	3	9	6	2	0	0	0	0	0	11	9	20
Hepatitis,	3	2	2	3	0	0	0	2	1	1	0	0	1	1	0	0	4	4	2	1	0	1	0	0	0	8	6	14
Biliary Calculi,	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Cirrhosis,	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	3
Icterus,	0	1	0	1	0	0	0	0	2	1	0	1	2	1	0	1	1	0	0	0	0	1	0	0	0	2	4	6
Disease of Urinary Organs,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
Nephritis,	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	2	0	0	0	2	1	3
Ulceration of Kidney,	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2
Suppuration of Kidney,	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	1	1	0	1	0	0	0	1	4	0	4
Calculi of Kidney,	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Morbus Brightii,	0	0	0	0	0	1	2	0	2	0	7	1	0	0	0	0	5	2	1	4	0	0	0	0	1	9	4	13
Diabetes,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Disease of Bladder,	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2
Cystitis,	1	0	2	2	0	1	2	0	1	0	1	1	0	0	0	0	1	3	0	2	3	1	1	0	0	9	2	11
Total,	97	133	66	107	75	92	70	61	86	75	102	75	109	56	21	28	144	181	156	130	81	84	33	5	11	622	417	1039

CLASS IV.—The diseases of the alimentary canal and abdominal viscera, (see Table IV,) here occupy a much larger portion of the records of mortality than has been noticed elsewhere. By this table the proportion to the whole number of deaths is as 1 to 5, whereas, we learn from statistics in

England, that there it is as 1 to 8. The difference is attributable, partly to endemic influence, and partly to my observations being exclusively confined to that class of society whose vital powers are depressed by want, fatigue and other concomitants of poverty, and who are, therefore, most subject to affections of this nature. The greater prevalence of dysentery in the autumnal months has been observed everywhere. I find that the proportion, which the last half of the year bears to the first, is as 3 to 1. Diarrhœa is somewhat more equally divided, there the proportion being as 5 to 2.

The cholera appeared in the house July 29th, and disappeared August 27th. Its influence over its class is perceptible, as fewer deaths occur from the other diseases in that year than in any of the series. The fatality the previous year is astonishing, being nearly twice as great as has been observed since. This has been remarked elsewhere also, and leads to the belief that the high inflammatory tendency then manifested exercised some influence over the development of this epidemic.

The deaths in the succeeding year, falling so far short of the usual number, is attributable, I believe, to the purification of the cholera; for by seizing on feeble constitutions it would necessarily occasion a diminution in deaths from other causes.

Bearing in mind the statement made in the introduction, that the classification had been made in relation to the organ affected, it may be thought that anasarca is out of place; but I have included it under this head, from its close connection with abdominal dropsy and its causes.

TABLE V.

Diseases of Nutrition.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	From 1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Male.	Female.	Total.
Marasmus, . . .	10	12	1	15	7	7	13	16	4	9	12	15	71	22	3	1	4	2	3	6	6	1	2	0	57	54	121
Debility, ...	9	0	0	0	0	1	2	3	0	0	0	3	5	0	0	0	2	2	3	1	5	0	0	0	10	8	18
Total, .	19	12	1	15	7	8	15	19	4	9	12	18	76	22	3	1	6	4	6	7	11	1	2	0	77	62	139

Class V.—Inanition and abstinence are included under the first head of the diseases of nutrition, (see Table V.); and debility comprehends asthenia and exhaustion.

Children suffer particularly from these diseases during the warm weather, one-half of the cases occurring in the three months of summer. Bad constitution of the parent, and an impure atmosphere increase the liability to these diseases, as does also most especially the loss of the mother's milk; for I know that an epidemic of puerperal fever, which prevailed last winter, indirectly proved fatal to many children who fell under my care; and I have not seen one death from faulty nutrition where the natural food was obtained;—a fact to be well considered before advising a mother to wean her infant.

TABLE VI.

Cachexia and diseases of uncertain seat.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	From 1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Rheumatism,	2	3	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	3	1	4
Erysipelas,	2	3	4	1	1	1	0	0	2	7	4	12	4	1	0	0	7	7	8	6	2	0	1	0	1	17	13	30
Scrofula,	2	0	3	4	1	1	1	0	3	6	5	6	10	4	0	0	1	0	2	1	0	0	0	0	0	24	13	37
Tabes Mesenterica,	0	0	0	0	0	0	0	1	1	1	0	1	3	0	0	1	0	0	0	0	0	0	0	0	0	12	11	23
Phthisis,	108	106	91	116	95	96	113	109	132	123	190	113	3	5	4	40	478	276	256	119	64	22	4	1	12	838	474	1312
Anemia,	0	0	0	0	1	4	0	0	1	0	0	3	3	0	0	0	2	2	0	2	0	0	0	0	0	3	5	8
Purpura Hemorrhagica,	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	1	0	0	0	0	3	3	6
Hemorrhage,	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5
Splenic Cachexia,	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5
Fungus Hematodes,	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
" of Liver,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Cancer,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cancer of Eye,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Heart,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Neck,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Mamma,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Stomach,	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Intestines,	0	0	1	0	0	0	0	0	1	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
" of Rectum,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Liver,	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
" of Liver and Lungs,	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Vagina,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Uterus,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" of Penis,	0	1	0	0	0	2	4	1	1	1	1	4	0	0	0	0	1	5	4	1	2	0	0	0	1	14	2	16
Cancerous Tumour of Abdomen,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	3
Osteo-Sarcoma,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total,	117	112	102	124	100	106	131	117	132	148	136	141	6	9	9	42	498	300	277	132	74	27	7	2	15	918	548	1466

Class VI.—Cachexiæ and diseases of uncertain seat.

Phthisis was not included under the diseases of the respiratory organs, because I do not think it a mere local affection, but that "its essential characters depend much more upon its diffusion through the whole body." Here it swells the catalogue, proceeding with a steadiness which is surprising; change of temperature and seasons offers little barrier to its fatality; the same number die in July as in December, in April as in August, and it is only in the two first months of autumn that any appreciable diminution is observed. All ages are liable to its attack; but not equally so, and this table shows that its development is much more common at that period when the growth of the human body is completed, and a subsidence of the nutri-

ent vessels takes place, for one-third of the whole number die between the ages of twenty and thirty; and this is farther corroborated by statistics elsewhere. Females are thought to be the special victims of pulmonary decay; that this is so in England, I doubt not: but it should not hold good in this country, where women are not subject to so much exposure, and where the labour of the husband is generally sufficient to afford comfortable subsistence to his family.

TABLE VII.

Fevers and exanthemata.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown	Male.	Female.	Total.
Intermittent Fever,	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	3	0	3
Malignant Intermittent,	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	1	1	2	1	0	0	0	0	5	0	5
Remittent,	8	2	0	1	4	0	0	0	1	1	0	0	0	0	1	0	8	4	1	2	0	0	1	0	0	12	5	17
Continued,	7	2	0	0	0	0	0	0	0	0	2	1	0	1	0	1	2	4	0	0	2	1	0	0	1	5	7	12
Typhoid,	13	20	7	2	4	4	3	2	3	1	7	7	1	1	0	5	32	14	5	3	5	1	1	0	5	45	28	73
Typhus,	54	14	4	4	60	15	19	1	8	0	9	3	0	1	1	6	56	43	39	21	14	5	3	0	2	112	79	191
Hectic,	4	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	4	2	0	0	0	0	0	0	0	5	2	7
Ataxic,	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	2
Miliary,	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Gastric,	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
Rubeola,	4	0	0	15	0	0	8	0	0	0	0	0	4	18	5	0	0	0	0	0	0	0	0	0	0	15	12	27
Scarlatina,	2	0	0	0	0	0	1	1	1	0	1	0	2	2	2	0	0	0	0	0	0	0	0	0	0	4	2	6
Variola,	0	0	0	3	0	0	0	0	0	0	1	1	0	1	0	0	1	2	1	0	0	0	0	0	0	3	2	5
Varicella,	1	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Total,	95	41	13	25	68	23	31	5	13	4	21	13	9	24	9	13	104	71	48	30	23	8	5	0	8	211	141	352

Class VII.—The prevalence of this class varies everywhere more than any other. With every year and situation a marked change is observed; thus, though there were only 729 cases in Glasgow during 1830, there were 5387 in 1837, and while in that place, the average during a space of six years, was 1842; in Manchester, with an excess of population of 28,000, it only amounted to 497. What the prevalence has been here, I have no means of ascertaining. I treat of the mortality and find that this varies astonishingly also:—thus, in Glasgow, for different years, it bore the proportion to the whole number of deaths of 1 to 15·6, to 10 to 4·7 annually; and here, during the first year, it is as high as 1 to 6·4, while taking the average of the last six years, it is reduced as low as 1 to 27. To the whole number of admissions during one year, the proportion of deaths from this cause was as 1 to 27, while the average for six years is as 1 to 149·4. There having been 14,495 admissions and but 97 deaths. The influence of seasons over typhus I am able to give from other tables, by which I see that the spring months have a decided preponderance, and that $\frac{7}{9}$ths of the cases occur during the first half of the year. That the number of deaths from rubeola should exceed that from scarlatina does not surprise me, inasmuch as many statistical tables show the same, but I allude to this fact, since it militates so much against the general opinion on the subject. I cannot dismiss this class without saying, that the belief that epidemics of fever do not add to

the general mortality, is ill founded, for in those years in which they are most prevalent, I find that deaths from other causes are not diminished, but actually increased; that is, so far as my observation has extended.

TABLE VIII.

Diseases of Women and Lying-in Room.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Puerperal Peritonitis,	4	0	2	0	0	1	3	1	3	0	8	8	0	0	0	1	21	8	0	0	0	0	0	0	0	0	30	30
Hysteritis,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Child-Bed,	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	4	4
Premature Labour,	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	3
Hemorrhage from Retained Placenta,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Hemorrhage from Uterus,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Puerperal Convulsions,	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Disease of Ovary,	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	3	3
Ovarian Tumour,	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3	3
Ovarian Dropsy,	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	2
Premature Birth,	0	0	0	1	0	0	0	0	0	0	2	1	4	0	0	0	0	0	0	0	0	0	0	0	1	3	1	4
Asphyxia,	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
Overlaid by Mother,	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2
Total,	6	2	2	3	3	2	3	4	7	0	12	13	8	0	0	2	28	15	1	1	0	1	0	0	1	4	53	57

Class VIII.—The deaths from child-birth form a strikingly insignificant portion, when we consider that this includes nearly a thousand labours, and suggests a compliment to the obstetricians, under whose superintendence these wards have been placed, for I believe, in no hospital in the world, can a more flattering proof of success be given, particularly too, when it is recollected, that the cases have been entirely composed of the very dregs of society, all more or less shattered in constitution, and among whom one would be most likely to have profuse hemorrhage from insufficiency of uterine action.

Puerperal peritonitis occupies the most prominent place in this table.

Three epidemics have prevailed since my acquaintance with the house. In character one was mild, and two very violent, usually proving fatal on the third day; which will account for the proportion of deaths to those attacked being as 2 to 3. No connection can be established between this fever and erysipelas, farther than would appear from their prevalence at the same time, on two different occasions: but in a large hospital of this kind, there will always be found several cases of erysipelatory inflammation, and when the puerperal fever occurs, it may be looked on as a coincidence, not a consequence, for they certainly do not always accompany each other, nor, in the two instances mentioned, has the cessation of the one exercised any appreciable influence over the other epidemic.

TABLE IX.

Surgical Diseases.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100	Unknown.	Male.	Female.	Total.
Gangrene,	4	3	.	4	4	2	10	3	2	1	3	.	2	1	.	3	1	5	5	5	6	4	4	.	.	22	14	36
" of Thigh,	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	.	1
" of Labia,	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	1
" of Mammæ,	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	1
" of Rectum,	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	1
" of Scrotum,	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	2
" of Ear,	.	.	.	.	.	.	.	.	.	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	1
" of Arm,	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	.	1
Hospital Gangrene,	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	1	.	1	.	.	.	.	.	.	1	1	2
Excessive Sloughs,	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	.	.	.	.	.	.	2	2
Anthrax,	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	.	1
Abscess,	3	2	.	1	.	.	.	.	.	1	.	3	1	.	.	.	3	2	3	1	2	.	.	.	.	10	2	12
Phlegmonous Abscess,	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	1
Internal "	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	2	.	.	.	.	1	1	2
Iliac "	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1	1
Femoral "	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	1
Psoas "	1	1	.	.	.	1	2	2	1	1	.	.	.	.	.	3	2	2	1	1	.	.	.	.	.	4	5	9
Lumbar "	1	2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	3	2	.	.	1	.	.	.	.	4	2	6
Cold Abscess of Thigh,	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	1
Abscess in Ear,	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	1
" of Knee Joint,	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1	.	1
Suppuration of Scrotum,	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	1
Caries,	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	.	1
Caries of Petrous Bone,	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1	.	1
Caries of Bones at Base of Brain,	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1	1
Caries of Superior Maxillary,	.	.	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	1
Caries of Spine,	.	1	1	.	.	.	.	.	2	.	1	.	.	.	.	3	1	1	.	.	.	.	.	.	.	3	2	5
Caries of Lumbar Vertebræ,	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	1
" of Sternum,	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	2	.	.	.	.	.	.	.	2	.	2
" of Pubes,	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1	.	1
" of Knee Joint,	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	.	2	2
" of Tarsus,	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	1
Coxalgia,	.	.	.	.	2	1	1	1	.	.	1	.	.	2	2	1	1	.	.	.	.	.	.	.	.	4	2	6
Necrosis of Femur,	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1	.	1
Ulcer,	6	2	.	.	.	.	.	.	1	.	.	3	1	.	.	.	.	2	2	1	6	.	.	.	.	6	6	12
Ulceration of Mammæ,	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	1
Burn,	2	3	3	3	1	.	.	.	2	.	.	2	.	.	1	3	1	4	3	2	.	2	.	.	.	7	9	16
Accidents,	2	.	.	.	3	.	3	3	2	1	2	1	2	.	.	1	4	2	5	1	2	.	.	.	.	16	1	17
Gunshot Wounds,	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1	.	1
Wound,	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	1
Wound of Lung,	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1	.	1
Fracture of Neck of Femur,	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	.	1
" of Femur,	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	2	.	2
" of Spine,	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	1
Strangulated Hernia,	1	1	.	.	.	.	.	.	.	.	1	1	1	.	.	.	.	1	.	.	2	.	.	.	.	3	1	4
Infiltration of urine in Perineo,	.	.	.	2	.	.	.	.	.	.	1	.	.	.	.	.	.	1	1	.	1	.	.	.	.	3	.	3
Retention of Urine,	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1	.	1
Stricture of Urethra,	.	.	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	2	.	2
Calculi in Bladder,	.	.	.	.	.	1	.	.	.	.	1	.	.	.	.	1	.	.	.	1	.	.	.	.	.	2	.	2
Vesico-Vaginal Fistula,	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	2	.	.	.	.	.	.	.	.	.	2	2
Fistula in Ani,	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	1	1	.	.	.	.	.	2	.	2
Polypus Nasi,	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	1
Ozena,	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	1
Lupus,	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	1
Cutaneous Eruption,	2	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	1	1	2
Rupea,	.	.	.	.	.	2	1	1	.	.	.	.	.	3	1	.	.	.	.	.	.	.	.	.	.	3	1	4
Traumatic Erysipelas,	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	1
Spina Bifida,	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1	.	1
Tumour of Neck,	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	1
Femoral Aneurism,	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	1
Fungus Articuli,	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	1
Syphilis,	5	4	5	2	1	1	2	8	5	5	2	2	6	1	1	4	14	15	1	.	.	.	.	.	.	14	28	42
Operation,	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	1
" for Cancer,	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	1
Total,	31	22	20	15	21	12	27	19	19	10	15	24	15	12	6	22	40	45	30	19	30	9	6	0	1	141	94	235

Class IX.—The comparative remoteness of the Blockley Hospital from the city is the reason why this table presents so small a proportion to the whole. It has been included, however, such as it is, merely that the causes of the whole number of deaths might be given. Endemic influence has no bearing on their development, and as it has been my object to treat particularly of diseases incident to climate and situation, this order will be dismissed without farther comment.

TABLE X.

Diseases not otherwise arranged.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	From 1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Mumps, . .	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Constitutional Irritation,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
Effects of Opium,	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	2
Exposure to Cold,	1	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	1	1	0	1	2	0	0	0	4	1	5
Suicide, . .	1	0	0	0	2	0	1	0	2	1	0	0	0	0	0	0	1	2	1	0	1	0	0	0	2	2	5	7
Excessive Stimulation, . .	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
Old Age, . .	20	19	10	25	5	5	9	16	5	6	22	23	0	0	0	0	0	0	0	0	9	51	39	38	8	61	104	165
Unknown, . .	6	9	0	0	0	0	13	3	1	4	2	3	8	1	0	0	5	6	5	7	2	3	0	0	4	23	18	41
Total, .	31	29	10	25	7	5	23	21	8	12	25	27	9	2	0	0	8	9	7	7	13	57	39	38	14	93	130	223

Class X.—Of the diseases comprised under this head, because they could not conveniently be arranged otherwise, old age alone suggests a remark, and I add my mite to the existing testimony in favour of the greater longevity of woman. The proportion to man, of those who die from this cause in England, is as three to two, and the same is observed here. Of fourteen, who lived beyond one hundred, but five were men; and the only two who exceeded an hundred and ten were women, one of whom reached her hundred and nineteenth year, to fall a victim of cholera in 1832. The superior value of female life, thus proved, is owing, I think with Dr. Gregory, not to any difference in the original construction, but to the smaller demand made on her vital powers during the middle period of life, the more equable temperament of her mind, and, thirdly, to the less degree of toil required at her hands in a highly civilized country.

An examination of each class has now been made, and as few remarks offered as were consistent with the nature of this paper. Each table gives the number of deaths from each disease, with the age and sex of the individual. As a whole, it embraces the causes of all the deaths which have there occurred. The total is 5056. From August 1st, 1831, to August, 1832, the number is 611, and for each succeeding year as follows—461, 361, 448, 422, 404, 437, 357, 371, 347, 424, 413. Of the whole number, 880 have been under twenty years of age, 2041 between twenty and forty, and 1862 between forty and eighty.

The proportion which each class bears to the whole can easily be seen; thus in every thousand deaths,

There are of the	1st	Class,	Diseases of	Brain and Spinal Marrow,	- - -	177
" "	2d	"	"	" Respiratory Organs,	- - - -	85
" "	3d	"	"	" Heart,	- - - - - - -	40
" "	4th	"	"	" Alimentary Canal and Abdominal Viscera,		206
" "	5th	"	"	" Nutrition,	- - - - - -	28
" "	6th	"	Fevers and	Exanthemata,	- - - - - -	290
" "	7th	"	Diseases of	General Location,	- - - - -	70
" "	8th	"	"	" Surgical nature,	- - - - -	12
" "	9th	"	"	" Women and Lying-in Room,	- - -	47
" "	10th	"	"	not included above,	- - - - -	45
						1000

The object of this paper is now accomplished, but I cannot close it without deploring the great lack of statistical information throughout this country. Who would ever imagine that a death-book afforded the only records of a large hospital, yet such is the fact; and it is only of late that any diagnosis of disease has been registered on the patient's admission. Had proper attention been paid to this point, what a vast fund of information might have been accumulated, and then I should have been able to give, of each disease, the relation between the mortality and frequency of occurrence.—The means of doing so are, unfortunately, not afforded me; every record of the hospital has been examined, and the result here given. Of their accuracy, I need say nothing; this is ensured by the advantages which the institution enjoys in the services of many of our first medical men, and the facilities of post-mortem examinations.

REVIEWS.

ART. VII.—*A Treatise on Operative Surgery; comprising a Description of the various Processes of the Art, including all the new Operations; exhibiting the state of Surgical Science in its present advanced condition; with eighty Plates, containing four hundred and eighty-six separate illustrations.* By JOSEPH PANCOAST, M. D., Professor of General, Descriptive and Surgical Anatomy, &c. &c. Philadelphia: Carey & Hart, 1844. 4to. pp. 380.

THE English language has but little to boast of in systematic surgical compilations; and even less, in systems of operative surgery proper. Our surgical authorities appear to have been mainly interested in establishing correct principles in anatomy and pathology, and to have rarely thought of systematizing. We have admirable compends, invaluable treatises on many of the specialities, with innumerable memoirs, essays and observations on detached subjects in every department of surgery, either published apart, in our periodical literature, or in the transactions of our societies; yet up to the present day we can boast of nothing to compare in systematic surgery, with the masterly productions of Heister, or of Boyer; and in operative surgery, with the long since antiquated Demonstrations of Dionis, the *Médecine Opératoire* of Sabatier, the erudite Treatise of Velpeau, the Manual of Malgaigne, or the magnificently illustrated work of Bourgery.

The surgical authorities of our own country are still less disposed to systematic performances than the surgeons of Great Britain. We have, it is true, a few very useful compends, prepared by teachers as text-books for their students; but in operative surgery, prior to the appearance of the work before us, we can refer to nothing from the pen of an American. Our surgical teachers after laying down general rules for operating, have been disposed to leave all the minute details to the common sense of the practitioner. Practice, and not the statute, would appear with us to be the common law by which all such matters are to be regulated. This, perhaps, may, after all, be considered good policy in educating the youth of America, who have long had the reputation of learning to whittle before they learn to speak, and of understanding the use of edged tools instinctively. Science might confuse in attempting to teach them what they already know, or at any rate, appear to know, sufficiently well without it.

So far as we now recollect, the works on operative surgery by Sharp, Charles Bell and Averill, are the only ones entirely devoted to this department of the art, that had appeared in England prior to the recent publications of Liston and of Fergusson.

Sharp's treatise, the first of these in order of time, founded on a fair share of personal experience, is mainly devoted to the major operations; and of these it treats with almost Celsian brevity. A pupil of the celebrated Cheselden, he dwells with marked interest on the improvements introduced by his master. He has but little favour for foreign authorities,

particularly the French. "It is true," says he, "we have a few translations from the writings of foreigners; but besides that they are unacquainted with these improvements, their manner of describing an operation is so very minute, and, in general, so little pleasing, that could nothing new be added, or nothing false exploded, the possibility of only doing it more concisely and agreeably, would be a reasonable inducement for the attempt." Well for some of our recent writers, and better for their readers, had they, in preparing their works for publication, pondered on the allusion conveyed in the latter clause of this passage.

The operative surgery of Charles Bell, at its first appearance, must have been founded on a rather small stock of surgical experience, such as is acquired, for the most part, in the dissecting room, and by reflecting on the practice of others. It has the merit of pointing out, in a forcible manner, the intimate relation between correct principles in surgery and an accurate knowledge of anatomy. It is adorned with numerous spirited sketches from the pencil of the author himself, which will compare advantageously, so far as they go, with almost any thing of the sort that has since appeared. Surgical science, however, has long since shot far ahead of this performance, which, but for the reputation of its author in other departments, might ere this have been forgotten.

Of Mr. Averill's little volume we have only to say that its claims are very modest. It was originally designed only as a manual for assisting the student in his manipulations on the dead body.

Passing by these earlier essays, we come to the "Practical Surgery, with one hundred and twenty engravings in wood," by Mr. Liston. The merits of this highly practical performance are sufficiently known; and too highly appreciated by the profession to be called in question here. Its author has thought and acted too much for himself, too much on the responsibility of his own cool and collected judgment, to be the mere compiler of other people's labour. His profound knowledge of the principles and bearing of his art, his powerful and rapid hand, his delicate and accomplished touch, have impressed his name indelibly on the records of surgery. His treatise is invaluable as the history of his own practice. But, after all, it is only the practice of Mr. Liston.

Mr. Fergusson, with some of the defects of the former, has many of his sterling qualities;—correct in his anatomy, spirited in his descriptions, skilful in his operations; a practical, but not a finished teacher. In his recent "System of Practical Surgery," Mr. Fergusson, like Charles Bell, has had an eye more directly towards the student and the dissecting room. The practitioner will find in it many useful suggestions, and an excellent but not a complete system of the operative surgery of the day.

With this hasty survey of what had already been effected in the department of operative surgery, by systematic writers in England, we are somewhat prepared to give an estimate of the ground yet unoccupied, and which Dr. Pancoast has attempted to appropriate. Prior to the appearance of the work before us, then, we were without a classical treatise on operative surgery, comprising a description of all, or even most of the processes of the art. Such treatises, however, existed in other languages; and Dr. P., by the aid of these and by other means, has undertaken to supply this marked deficiency. The title of his work, "A Treatise on Operative Surgery, comprising a Description of the various Processes of the Art, including all the New Operations, exhibiting the state of Surgical Science

in its present advanced condition; with eighty Plates," &c., is sufficiently ambitious.

It was formerly the fashion, in publishing compilations, to make some allusion, in the title-page, to selections or quotations from the best authors; a modest practice this, that of late is getting into disuse. Thus, some thirty years or more ago, was published in Philadelphia, in one octavo volume, a useful digest of the four volumes of Benjamin Bell, under the title of "A System of Surgery, extracted from the works of B. Bell, of Edinburgh, by N. B. Waters, M. D." So also about the same era appeared in New York, in two octavo volumes, a similar digest of the eleven volumes of Baron Boyer, under the unassuming title of "A Treatise on Surgical Diseases, and the Operations suited to them, by Baron Boyer; translated from the French, by Alexander H. Stevens, M. D." This last very useful digest, notwithstanding its honest title-page, succeeded, some how or other, in holding for many years a favourable place in the estimation of the profession. But, as we have already said, this primitive mode of announcing new books is gradually growing obsolete. The present is an age of improvement, as well as of book-making; and every teacher and professor must have, for the benefit of his pupils, a text-book of his own, with his own name in front of it, no matter whence his materials are derived. Nay, so numerous are the advantages attending the present easy modes of book-making, that the business is no longer confined to professors.

It has been intimated, and such probably is the fact, that this modern improvement is a discovery of publishers, who appear to have found out that useful scientific works are no longer saleable unless announced as the production of some one else than their real authors. We are told by an ancient legend that Faustus, in order to acquire the art of multiplying books by magic, was obliged to sell himself to Satan. So it is with such modern book-makers as sell themselves, with not even penury as an apology, to the publishers. In giving their name to works to which they have no other claim than as translators, abbreviators, annotators or remodelers, they may, like Faustus, do good in their day and generation; but, then, they must not be disappointed if obliged, in reputation, to share the fate of Dr. Faustus in the end.

But Professor Pancoast does not claim for the work before us the character of an original production. The necessity, he observes, of thoroughly illustrating the operations of surgery, has long been felt. Almost every modern surgeon of distinction, and especially Camper, Scarpa, Cooper, Hesselbach, Bell and Dupuytren, have contributed to the attainment of this end.

"The attempt to collect the newest and completest modes of illustration into a continuous whole, has been made but in two instances,—by M. Froriep, of Berlin, who has issued them in numbers, without any other regard to order than the time of their appearance; and by M. Bourgery, of Paris. The voluminous and expensive character of these works, and especially of the latter, which is as yet but little more than half completed, as well as their being clothed in a foreign language, renders them, in a great degree, inaccessible to the American surgeon. With these admirable treatises before him as a guide, and having at hand the greater portion of the surgical works which have recently appeared in various languages, and with the advantage which nine years continuous service in one of the largest hospitals of North America has given him, not only in comparing, to a certain extent, the value of the different methods, but in enabling him to obtain a large number of accurate drawings of operations which have been done

by his own hand, the author has endeavoured to furnish a work that shall represent, so far as its limits will allow, the operative surgery of the day."

The work, then, according to this announcement, and as every work pretending to set forth the present improvements in operative surgery should be, is substantially a compilation; but, as we are led to infer by the foregoing passage from the advertisement, with characteristic features of its own of sufficient merit to commend it to our most respectful consideration.

Against judicious compilations we have nothing to advance. We cannot do without them. The enlightened and laborious compiler, provided his research has been extensive, and mostly among original authorities, and his collections thorough and judicious, deserves, and usually acquires quite as much credit as the inventive and original writers from whom his materials are directly drawn. But then, every book detailing the opinions or procedures of original writers or operators is not in this sense a compilation. There is such a thing as compiling from compilers, and of making a very small modicum of research pass for infinitely more than it costs. Paré, although a benefactor to his race, by his admirable innovations, was a skilful and laborious compiler. Heister was a compiler who has had but few, even up to the present day, to compete with him. Mr. Samuel Cooper is a compiler, and so is M. Velpeau. But we have some few scruples of conscience against placing Professor Pancoast in such company. For, notwithstanding the allusion to numerous sources of information, which we have already quoted from his advertisement, his work affords no evidence that his research has been at all extensive. We do not wish to infer that his reading has been limited, that he may not have consulted numerous authorities, or that he has contributed nothing valuable of his own;—but we cannot resist the conviction that the great mass of his text, and at least three-fourths of his lithographic illustrations, have been drawn from a single source. Some of those who peruse the work may imagine they see the ghost of Velpeau in every page; others at every turn detect the hand of Malgaigne. For ourselves we see but little else in this production than a miniature reflection of Bourgery. We have not, it is true, compared it word for word with the voluminous production of this French author; not having the work of the latter continually at hand for so doing. But we have compared, at random, different sections of the two performances; and found the resemblance so very close, that we are forced to believe the one has not only served as a model, but has also supplied the mass of material for the other.

It is easy to reconcile these different resemblances. M. Velpeau, distinguished as much for his professional erudition as for his practical ability, has presented to the profession a system of operative surgery so learned as to constitute a store-house for those who have since followed him. M. Malgaigne has adopted his plan, condensed his materials and added some judicious observations of his own, especially in his sections devoted to operative anatomy, and in his appreciation of the different operative procedures which he describes as applicable to a given object. M. Bourgery, with the writings of both these authors before him, has had little else to do than to follow in their train, improving somewhat upon their plan, by the addition of some valuable materials on the history of particular classes of operations, and what is still more characteristic of himself, by

his system of magnificent lithographic illustrations. There is, then, a most striking resemblance common to the writings of these three authors; original in Velpeau, reflected in Malgaigne, modified in Bourgery; and, finally, communicated, indirectly, to the work under consideration.

How far Professor Pancoast has drawn from the work of Froriep, we are unable to determine, never having had an opportunity of consulting that German publication. But certain it is, unless M. Bourgery has drawn from the same source, that Professor P. can be but little indebted to him. He appears to have followed directly in the wake of Bourgery, condensing, modifying and re-arranging his text, re-assorting and appropriating the best of his lithographic illustrations, incorporating occasional passages from Fergusson, and other writers of England and America, and some original facts and observations of his own; and thus, with very little labour further than should appertain to him as translator, abbreviator and commentator, to have prepared a book, which, as we believe, however, must prove a useful one to the surgical student. Useful, because it contains much valuable matter nowhere else to be found in a collective form, as yet, at least, in the English language.

We must allude to another passage in the advertising page, before proceeding further. "It has not," observes Professor P. "been possible to enter into a discussion of the claims of different surgeons to particular processes, or to detail in full the therapeutical management of surgical affections, which would have expanded the work to an immoderate size."

Other difficulties than increase in the size of the volume may be suspected to have much to do in suppressing the claims of different surgeons to particular procedures. M. Velpeau, (and it is one of his main defects,) has himself given few or no references, in the body of his book, to the various authors from whom he has had occasion to draw his descriptions; and those who have either directly or indirectly copied him, have, of course, been obliged to follow his example. We hold it hardly sufficient to make a general acknowledgment in an advertisement, or preface, of indebtedness to a few distinguished names. Those who have done least have now and then done best, and hence the necessity of noticing them, and of acknowledging their claims more pointedly than those of the great masters of the art, whose names are familiar to all, and whose claims to originality are consequently in no great danger of suffering, even if omitted altogether by systematic writers. Besides, a compiler, in this respect, should consult the convenience of his readers, who are often in need of referring to original authorities for circumstantial details. This need we have many times experienced; and have more than once felt it in our perusal of the present work. The why, when and where of an operation, are often of as much interest as the name of its projector, who may have been an ancient or a modern, a German, Hindoo or Tennessean, for all that we can ascertain. The French writers, as well as Professor Pancoast, in this respect, would have conferred benefit on their readers, by imitating the example of Chelius.

But several complaints have reached us of want of due acknowledgment on the part of Professor P., towards the surgeons of his own country. Seeing the sources from which his work has been mostly prepared, his want of effort to supply inadvertent omissions on the part of the French authors, and the apparent haste with which the work has been presented

to the public, many of these complaints may be readily overlooked, others we may notice as we proceed.

Probably the most striking feature of the work is its attempt to furnish a thorough course of lithographic illustrations of the operations of surgery. The execution of these plates is highly creditable to the artists as well as to the publishers, who must have incurred in preparing them no inconsiderable expense. They add greatly to the beauty and value of the book, and will be found useful in conveying lively and accurate impressions of the procedures which they are intended to illustrate. Some of them would, at first view, appear to be unnecessary, except to complete a series; the subjects which they are designed to illustrate being sufficiently clear without them. A few of these less necessary plates, as it appears to us, might have been advantageously replaced by others which Professor P. has not thought fit to have copied from Bourgery. We refer to those in which M. B. has delineated most of the modern surgical instruments. Some of the plates, again, are, perhaps, objectionable as leading the student to infer that parts almost inaccessible on the living body, may be easily approached; thereby holding out inducements to undertake operations for which comparatively few are prepared, and which none should attempt, except after the most cautious examination of the recent subject. These objections, however, apply to the original designs, and not exclusively to the present transcripts. For, on the whole, the selection with which we are here furnished, is judicious.

The body of the work is divided into four parts:—First, Elementary and Minor Operations; Second, General Operations in reference to particular tissues; Third, Special Operations upon complex organs in particular parts of the body; to which is added a fourth part, on the sartorial surgery of the day, Plastic and Subcutaneous Operations.

The *First Part*, or that on elementary and minor operations, occupying twenty-seven pages of letter press, and illustrated with seven plates, is subdivided into eleven sections. In these we have a succinct, but sufficiently full description of the division of parts by the bistoury and scissors, of the division of parts by ligature, of phlebotomy or blood-letting in general, of arteriotomy, of cauterization, potential and actual, of reunion by suture, of setons, of issues, of moxas, of acupuncturation, and of the means of preventing and arresting hemorrhage.

Part Second, or that devoted to general operations, occupying one hundred and forty-three pages, and illustrated with thirty-seven plates, is subdivided into four sections. Of these the first treats of operations upon the veins; the second, of operations upon the arteries; the third, of operations for diseases of the bones and joints; and the fourth of amputations.

Part Third, or special operations, occupying one hundred and sixty-four pages of text, and illustrated with twenty-seven plates, is subdivided into nine sections. In these we have described, operations upon the eye-ball and its accessory organs; upon the ear; upon the nose and nasal cavities; upon the mouth and its dependent structures; upon the neck; upon the thorax; upon the abdomen; upon the anus and rectum, and upon the genito-urinary organs.

The *Fourth Part*, occupying thirty-eight pages, and illustrated with nine plates, is subdivided into two sections, the one devoted to plastic operations, the other to subcutaneous operations. On many of the sub-

jects given under the foregoing enumeration, nothing very new was to be expected. Our object, on the present occasion, is not to attempt any thing like a minute analysis, but rather to convey, as far as we are able, an impartial account of the main features of the work; noting its more striking passages, pointing out what appear to us to be occasional omissions, oversights or errors; dwelling now and then on such portions as appear to be original with the author, and which, as far as we can judge, consist mostly of descriptions of operations which he has either projected or performed.

Dr. P.'s mode of describing the various classes of surgical operations, is quite as clear and systematic as that of the authors whom he has chosen as his models. Before taking up the details of the operative procedures, he lays down some general observations applicable to the occasion; with a brief but comprehensive description of the surgical anatomy of the parts involved; and occasionally, but only when necessary, a brief account of pathological changes that require surgical interference. Little or nothing is said of pharmaceutical management, or of dressing and bandaging, prior to or after operation; subjects of paramount importance, but too often excluded from what has of late been technically called operative surgery. The details of operative procedures proper, are arranged, as usual, under the names of such surgeons as have the credit of having either suggested, practised, modified or recommended them.

Part First. *Elementary and Minor Operations.*—Of this division of the work, in which the author has very closely followed Bourgery, the *first section* is occupied with an account of the *bistoury*, its history, shape, the various modes of holding it, and the different forms of incision; and with a similar account of the *scissors;*—elementary details, proper enough in a treatise or course of demonstrations, but never thought of under any other circumstances.

The *second section* is devoted to the modes of removing parts by *ligature.* Here we have described the materials of which ligatures are composed, general rules for applying them, their various modes of application, and some judicious remarks on their effects.

The *third section* commencing with general observations on *phlebotomy*, speaks in course, first, of venesection at the bend of the arm; second, at the foot; next, at the neck; then of venesection in the neighbourhood of the affected part, and of bleeding from the cephalic vein. The anatomical descriptions in this section are worthy of special attention; but we have not space for transcribing them.

In the *fourth section*, speaking of *arteriotomy*, we find the author's first attempt at originality. The merits and peculiarities of his process for opening the temporal artery, we need not stop to consider.

The *fifth section* furnishes us with a full and interesting account of the articles employed as potential *cauteries*, their uses and modes of application; and with an account of the forms and uses of the actual cautery.

In the *sixth section*, on *reunion by suture*, and in the four subsequent sections, which are sufficiently full, we find little worthy of special note. The *eleventh* or last section of this division of the work, is one of considerable importance. *Hemostatics* or the means of arresting hemorrhage, we here find divided, first, into those applicable previous to operations; second, those employed during operations, and third, those that are called for afterwards. Under the first head we have compression by the hand,

with or without the aid of pad or compress; and next compression by instruments alone. Of these the first and oldest next to the simple bandage, is the *garot.*

"This was devised by Morel, in 1674, as a substitute for the circular bandages or ligatures employed previous to that period, for the purpose of arresting hemorrhage. As first used it consisted merely of a band or handkerchief twisted tight with a stick. This simple contrivance, from the convenience of its application in the field of battle, received the name of *field tourniquet.* The garot, as it has been latterly modified, consists of a pad to be placed on the skin above the artery, and which presents on its free surface a ring for the passage of the web or strap."—P. 92.

The account given by Dionis of the *wrench* or garot, is, that it was invented about thirty years before his time, at the seige of Besançon, by an army surgeon. It is called, says he, a *tourniguer*, because that, by turning the two little sticks run betwixt the arm and the ligature made of tape, we draw it as hard as we please. (*Dionis*, p. 388.)

The detached pad of Charrière, a useful instrument, recently introduced for compressing superficial vessels, is thus described:—

"The pad is attached to a plate, and resembles somewhat the lower frame of the French tourniquet, and is forced down over the artery by fastening the two ends of the strap after they have passed round the limb, upon the rows of buckle teeth with which its raised lateral margins are provided."—P. 29.

In speaking of venous hemorrhage during operations, our author, after accounting for its continuance, and describing several means of arresting it, goes on to say, that,

"As a last resort, each vein may be tied as an artery, though this measure is always attended with more or less risk of phlebitis. The same plans are to be pursued for the purpose of arresting bleeding from the veins after operations."—P. 33.

As a comment upon this passage, which we entirely approve, we may remark, that, after no inconsiderable observation, we do not remember to have seen phlebitis ensue simply as the result of applying a ligature to a *healthy* vein, although we have seen it follow an abrasion of the vein, made in attempting to secure the accompanying artery. The danger of phlebitis from the application of ligatures to veins after amputation, is probably not so great as we have been led to believe by the numerous catastrophes following their application to varices. The great danger of interfering with varicose veins, without reference to the particular modes of attacking them, depends upon the fact, that these vessels are already in a disordered condition, often in a state of chronic inflammation. To place a thread upon a diseased vein is quite a different and much more serious operation than to apply it on a healthy vessel.

In speaking of the means of arresting hemorrhage after operations, Dr. P. lays down some directions, which, to us, appear open to criticism.

"In parts which are inflamed the structure of the artery is sometimes found so soft as to cut across in the closing of the knot. The *mediate* ligature, as it is called, is then to be applied in the following manner: a thread is to be armed with a curved needle at each end; one of these needles is passed in a semicircle through the tissues at a little distance from the artery, and the second in a similar manner on the other side of the vessel, coming out near the point where the first entered. The thread thus passed is to be tied on the parts which it embraces," &c.—P. 34.

The course of procedure here recommended is, to say the least, rarely called for—we might venture to say, never. We cannot see the necessity for applying a ligature upon an inflamed artery at all. For arresting spontaneous arterial hemorrhage the ligature should be placed above the diseased portion, and the same remark holds good in the management of aneurisms. Again, says Dr. P.,

"Occasionally we find the larger artery, after amputation, so ossified in its structure as not to close without crushing under the loop. Under such circumstances I have succeeded satisfactorily by plugging the orifice with a piece of linen compress, and tying the vessel over it; when the ligature becomes detached it will bring away the plug. Professor Mütter has succeeded in nearly a similar way, by plugging the orifice with a portion of muscle from the detached limb." —P. 34.

The outer or cellular coat of an artery, as we take it, is rarely the seat of ossific deposits; and as it is by the compression of this coat mainly that the ligature operates in arresting hemorrhage in healthy vessels, we do not see the policy of the foregoing directions when the vessel is ossified. The danger of secondary hemorrhage after applying ligatures to ossified arteries is not so much from the sudden laceration of their coats as from their disposition to subsequent inflammation and erosion. The plug inserted into the orifice of the diseased artery is surely not the most likely means of guarding against such accidents. As to the choice between the plug of linen and the plug of muscle from the detached limb, we confess our preference, if forced to use either, would be in favour of the former. The detached muscle, strictured and compressed by a ligature, must go on to speedy decomposition; and, in decomposing, become a source of irritation to the living tissues. Placed within an inflamed or ossified artery, as it appears to us, it would rather favour than prevent the occurrence of secondary hemorrhage.

Part Second. *General Operations, or those practised with reference to one or more particular tissues.*—The *first section* of this division is occupied with *operations upon the veins*, exclusive of venesection and of hemostatic measures, both of which have been already noticed. Dr. P. speaks first of transfusion of blood, and subsequently of varicose veins.

In our first reading we had marked a few passages under this latter head as calling for criticism. But, in turning to the volumes of Bourgery, we find that certain omissions, and a somewhat confused repetition of processes, that are not very distinct, are the fault of the latter rather than of Dr. P. The same examination also exculpates him, in our view, from having failed to notice a mode of treating varices, which was first noticed in an article on varices, published in the number of this Journal for January, 1843. (See p. 57, case 17th.) To this, however, we cannot allude further at present, than to remark, that this modified way of applying pressure, if carefully followed out, and continued in from six to twelve weeks, will often succeed in effecting a permanent cure, and will always afford relief. The pressure should be as great as the patient can bear without interrupting the circulation, and kept so through the whole course of treatment, the patient in the mean time walking about.

The *second section* of this division of the work, occupying much greater space than either of the foregoing, is devoted to *Operations upon the Arteries.* After some general observations on the circumstances calling for this use of the ligature, and on the various stages of the operation, Dr. P.

proceeds to the mode of securing particular vessels. By way of illustrating the usual manner in which the several arteries are spoken of, we venture upon the following example, as the first in order, and among the briefest.

"*Of the Arteria Innominata.—Surgical Anatomy.*—The arteria innominata is, after the aorta and pulmonary arteries, the largest arterial trunk in the body. It is given off from the top of the arch of the aorta to the left of the middle part of the upper bone of the sternum, and a little more than half an inch from its upper margin. It passes from this place obliquely upwards and outwards, to a point immediately behind the sterno-clavicular articulation of the right side, at the upper margin of which it divides into the right primitive carotid and right subclavian. In its route it traverses the superior thoracic fascia of Cooper, (which is an important means of protection to the cavity of the chest,) about four lines below its place of bifurcation. The trunk of this vessel is usually found from an inch and a quarter to an inch and a half long. Its diameter in a well-developed adult is about half an inch. The place of its division is deep behind the sternum, from half an inch to three inches from the inner surface of the top of that bone. In front, the vessel is separated from the sterno-hyoid and thyroid muscles by loose cellular tissue, in which are lodged many of the inferior thyroid veins, that discharge into the left subclavian. Between these and the bone lies one part of great importance, the transverse vein, (left vena innominata,) which passes over from the left to the right side, but so near the root of the vessel, however, as to be out of the way of the operation.

"When the head is thrown forcibly backwards, and to the left side, the arteria innominata is drawn upwards, so that its point of bifurcation, as seen in Plate 8, fig. 1, is considerably above the sterno-clavicular articulation. *Posteriorly*, it crosses obliquely the root of the trachea. On its *inner* face is the left carotid, and in this angle of divergence, between the two vessels, projects the trachea. *Externally*, it rests for the greater part of its course upon the pleura covering the upper surface of the right lung. The right subclavian, and right jugular vein, and the common trunk they form, as well as the pneumogastric nerve, are placed so much on the outer side of the artery, at the point where it is tied, as not to be endangered in the operation, unless the surgeon errs by hunting too far outwards for the vessel, which, it is to be recollected, is lodged between the right margin of the trachea and the right sterno-clavicular articulation, immediately behind the sternal origin of the sterno-cleido-mastoid.

"*Anomalies.*—This great trunk is but rarely seen to deviate from the usual description. It occasionally, however, varies in regard to its direction and length, and has been found altogether wanting. I have in my cabinet several specimens of transposition of the great vessels coming off from the arch of the aorta. In one, the right subclavian originates on the left side, and crosses to the right, between the trachea and œsophagus. In another, having the same origin, it passes behind both these tubes. In a third, the two carotids spring from a common trunk, &c.

"*Anastomosis.*—Spontaneous aneurism of the arteria innominata itself has many times been met with, and instances have been noted by two observers, where it was found with one or both of the branches that arise from it obliterated after death. The anastomosing branches that may restore, under such circumstances, the circulation to the right side of the head and neck, are the branches of the left vertebral and carotid; and the thyroid, cervical, intercostal and internal mammary of the two sides, anastomose together so as to be able to return the blood to the right arm by the way of the supra and sub-scapula, external thoracic and circumflex vessels. The fact of its accidental obliteration serves in a measure to show the *possibility* of a successful result in the case of its being tied. The honour of having first peformed this most serious operation is due to Professor Mott, of the University of the city of New York.

"*Operation.—Process of Mott.*—(Plate 8, fig. 1.)—The patient is placed in the recumbent position, with the neck slightly flexed and supported with a pillow,

and the face turned to the opposite side in order to relax the sterno-cleido-mastoid muscle. The surgeon, standing upon the right of the patient, makes a transverse incision of three inches in length, commencing at the median line of the neck, and extending outwards parallel with, but half an inch above the upper border of the clavicle. Another incision of the same length is made along the internal border of the sterno cleido-mastoid, terminating at the commencement of the first. The platysma muscle and the superficial fascia are next carefully opened so as to expose the sternal portion of the sterno-cleido-mastoid, which is to be divided in the grooved director previously passed behind it. The inner two-thirds of the clavicular origin of the muscle is (are) to be cut in a similar manner; the muscle is then to be reversed upwards and outwards, as seen in Plate 8. The sterno-hyoid and thyroid muscles are now to be divided, after having been cautiously raised on the director. The surgeon then opens with the finger or the director the cellular tissue in the direction of the vessel, carefully avoiding the right internal jugular vein, which is found a quarter of an inch to its outer side, and the inferior thyroid veins, which usually cover it in front, and are to be drawn off laterally. The finger falls first upon the primitive carotid near its root. The surgeon turns this vessel downward, and cautiously tears the cellular tissue till the innominata is exposed. The vessel in question being now discovered, it is to be separated in its outer or right margin from the vena innominata of the same side, with the end of the director, and then pressing off lightly from it the vein and the recurrent-laryngeal nerve, the ligature is carried with a curved aneurismal needle from without inwards around the vessel.

"In operations upon the subject, I have found it more convenient to make the longitudinal incision first, as the skin becomes relaxed after the transverse one is made. Before attempting to pass the ligature, I find it best to raise with the forceps and divide in the front of the vessel a dense cellular layer, which is an extension downwards of the deep-seated fascia of the neck. Professor Mott secured the vessel with the ordinary silk ligature.

"Several other processes have been devised for the ligature of this artery. Græfe, who followed Dr. Mott in the operation, made only a longitudinal incision along the inner side of the sterno-cleido-mastoid, and partly with his finger and partly with the handle of the scalpel, separated the parts down to the carotid near its place of origin. Following this vessel, he reached the innominata, which he detached behind the upper part of the sternum from its sheath, so as to get his finger around it. M. Manec directs only the transverse incision to be made, and through that proceeds to isolate the vessel.

"*Process of King.*—This as last modified consists of an oblique incision, carried inwards and upwards from the right sterno-clavicular articulation over the supra-sternal fossa, to the left sterno-cleido-mastoid muscle, the surgeon standing on the left side. The artery is to be sought for between the trachea and the sterno-thyroid muscles, and surrounded with a ligature passed from without inwards. This process, though brilliant in its execution in the dead body, must be attended with great difficulty in its application to the living, from the contraction of muscles and the effusion of blood in so narrow a wound. That of Mott is to be preferred to all, as the most judicious in its plan, and likely to be most successful, as leaving less to hazard in the delicate manipulations required. In each of the several instances in which the operation has as yet been performed, the patient sunk from hemorrhage between the periods of nineteen and sixty days; and it is yet a question whether the great size and depth of the artery, its proximity to the heart and probable pathological condition in aneurisms of the carotid and subclavian, do not present such difficulties in regard to the formation of a clot in the side next the heart by the time the ligature separates, as to offer insurmountable obstacles to its successful performance. In Manec's experiments upon the inferior animals, in which the effusion of coagulable lymph takes place with greater facility than in man, the safe obliteration of the vessel, even when previously healthy, occurred but twice in four times. Still, circumstances may arise to justify its performance, especially when it is considered that the only alternatives presented are little to be relied on, viz., the securing

of the subclavian or carotid in the distal side of the tumour after the methods of Brasdor and Wardrop, or the uncertain process of Valsalva."—P. 42-3.

Dr. P. has not furnished, as by a little research he might have done, any account of the several attempts that have been made to secure the innominata since the date of Dr. Mott's operation, with the exception of his allusion to Græfe's case. Some of these, it is true, have not been published; but all, or most of them, are sufficiently well known to practical surgeons. Taken in connection, they furnish a most useful and admonitory lesson to those meddlesome operators who hold that a precedent of a distinguished name is forever afterwards sufficient to warrant them in any thing they may attempt.

We shall not follow Professor Pancoast very closely through the remainder of this important section on the modes of securing the main arteries of the body; but content ourselves by offering a remark or two on a few detached passages. And first, in speaking of the different needles for passing the ligature, he appears to have forgotten the claims of his fellow-townsmen, Drs. Hartshorne and Parrish, to an instrument which has sometimes been called the American aneurismal needle, and which some of the European writers improperly attribute to Dr. Mott. One or two other instruments more recently introduced for passing ligatures, might also have been noticed.

In speaking of the free anastomosis of the carotid arteries and the rapidity with which the circulation is restored to either of these vessels after ligature, Dr. P. observes, that

"It is for this reason that ligature of the carotid is now so commonly abandoned in the treatment of erectile tumours seated on the branches of that vessel."—P. 45.

The foregoing is the first intimation we have had of the sudden change in the views of the profession in reference to the treatment of erectile tumours by cutting off their supply of blood. It is only a few months since we witnessed, at the N. York Hospital, a most formidable disease of the sort in an infant only six months old, involving the forehead, eyelid, lips and other parts on the left side of the face, effectually overcome, and gradually subside by a sort of sloughing and ulcerative process, after the application of a ligature to the left common carotid, by Dr. J. K. Rodgers. We do not hold that this mode of treatment, which was instituted by Pelletan, and has proved successful in the hands of Travers, Dalrymple and numerous other surgeons, will always succeed. But if we now recollect rightly, it has oftener succeeded where the disease was seated among the ramifications of the carotid artery, and where this vessel was consequently the seat of operation, than under other circumstances. The remark which we have above quoted is more applicable to carcinomatous than to erectile tumours. The former have occasionally been attacked in this way. But their parasitic organization renders them less immediately dependent than the others on the state of the circulation in healthy tissues among which they are situated; and, hence, the attempt to cure them by cutting off their supply of blood, has generally proved unsuccessful. Dr. P. has here evidently been misled by a term employed by Bourgery. *Erectile tumours* should not be looked upon as equivalent to "*tumeurs sanguines.*" The latter includes fungus hematodes and other carcinomatous growths as well as erectile tumours.

The proximity of the internal jugular to the carotid exposes the former to occasional injury in attempts to secure the artery.

"If the internal jugular vein should by accident be opened, a casualty which has sometimes happened, it should be seized at once with the thumb and finger; a couple of fine pins are then to be passed through the edges and across the orifice, and a delicate silk ligature tied below so as to embrace the opening; the pins may then be withdrawn."—P. 47.

It strikes us that such a procedure would be exceedingly liable to be followed by secondary hemorrhage. We would much prefer either resorting to simple pressure, or to a ligature placed completely around the vessel, as in the case of Mr. Simmons, of Manchester, mentioned in connection with the foregoing passage—and in a case which occurred a few years since in the practice of Dr. Vaché, of N. York. In the latter instance, the patient, a child five or six years old, subsequent to an attack of scarlatina, was seized with gangrenous inflammation, which destroyed the greater part of the soft tissues on the side of the neck, and at length reaching the deep jugular vein at its upper part, led to sudden and alarming hemorrhage. Dr. V. applied a ligature around the vessel just at the point where it emerges from the skull. The hemorrhage was checked; the ligature came away with the dressings, on the third day; and the child rapidly recovered.

Dr. Pancoast, in this section of his work, gives several processes for securing blood-vessels, of which he claims to be the projector. Among these are his process for taking up the lingual artery, which, however, he appears never to have practised upon the living subject; his operation, once practised, upon the posterior auris; his operation upon the temporal, "perfectly successful in several instances;" upon the axillary, which for years he "has been in the habit of exhibiting to his class;" upon the anterior intercostal in the forearm, as yet simply projected; and perhaps one or two others. The merits and peculiarities of these several operative procedures, some of which appear to be worthy of attention, we cannot now stop to discuss.

"In cases of popliteal aneurism," says Dr. P., "the great freedom of anastomoses between the upper part of the thigh and the ham, has frequently caused a return of pulsation in the tumour before its contents have been absorbed without interrupting the cure; though in some cases, to render it complete, it has been found necessary to employ, in addition, pressure upon the surface of the tumour."—P. 75.

In connection with this passage we would remark, that ligature of the femoral, for the cure of popliteal aneurism, in order to be effectual, does not necessarily require a total arrest of circulation in the vessel at the ham. In one instance we have known the aneurismal tumour, at the popliteal space, that had apparently been cured by ligature of the femoral, return suddenly after an interval of a year, and again disappear on the application of a ligature to the same vessel above the profunda.

Before leaving the subject of the arteries, we would remark that we have met with a few verbal inaccuracies, probably from inadvertency in proof reading, which might mislead the student, and which, therefore, require notice. Thus, Dr. P., at p. 79, makes the extensor pollicis pedis muscle, as it passes downward, cross *behind* instead of in front of the anterior tibial artery; and places the tibialis anticus muscle in the middle of

the leg, on the *outer* instead of the inner side of the same vessel. In the description of plate xiv., left side, at page 70, he calls the *external* iliac artery the *internal*

The next, or *third section*, is occupied with *Operations for Diseases of the Bones and Joints*, under which we have, 1st, those for dropsy of the joints; 2d, for the removal of foreign bodies from the joints; 3d, for ganglions, &c.; 4th, for dropsical tumours of the bursæ; 5th, for complicated fractures and luxations; 6th, for false joints; 7th, for deformities from irregular union of broken bones; 8th, for exostosis; 9th, for bony cysts; 10th, for necrosis; 11th, for trepanning; and 12th, for resection of bones. We can touch only upon a few of these subjects.

In treating of *articular effusions*, Dr. P. speaks of tapping either with the bistoury or trocar, of mucilaginous injections, and of injections of iodine after the method of Mr. Martin, but says nothing of a practice which not long since had considerable repute, especially in New England, and which, we believe, was original with the late Professor Hubbard, of New Haven. In a manuscript account of his practice, which we happen to have in our possession, he thus speaks of it under the date of June 5th, 1837.

"*Serous effusions in consequence of inflammation of the joints.*—In such cases, whether arising from external injury or not, especially when absorption could not be produced by external remedies, I have made a puncture into the bursæ and discharged the serous fluid. The fluid usually collects again. In two days I probe open the orifice and discharge what may be collected, usually a small quantity. I then inject a solution of corrosive sublimate, (grs. x to a pint,) keeping the injection in a few minutes, then pressing it out. Considerable pain and irritation often follow. Opium soon relieves these, however. Three days afterwards I probe open the orifice again; and if the serous fluid continues to be discharged, I inject again. I would remark that I open the orifice every day after the injection. At first the discharge is considerable, semi-purulent. In three days it again becomes serous. I have never been obliged to inject more than two or three times, and three or four days apart. One injection often suffices; and, at the end of three days, I find adhesion has taken place. I have treated serous effusions of bursæ not connected with joints in the same manner, and with good success. I have been surprised that, in the affection called, in Great Britain, House-maid's Knee, extirpation, and, in some instances, re-extirpation has been practised. I have never failed to cure it in the mode just mentioned."

In suppuration of the joints, and in some instances after effusion of blood in these cavities, he speaks of having successfully resorted to the same practice. We do not undertake to vouch for the merits of the treatment as applied to the joints, having never resorted to it ourselves; although, as long ago as 1833, we had employed the same solution successfully in the treatment of psoas abscess. It appears to us, however, quite as worthy of a trial in treating diseases of the joints as the iodine solutions; and its author, Dr. Hubbard, formerly Professor of Surgery in Yale College, quite as worthy of mention in connection with the practice as Mr. Martin for his iodine injections.

In speaking of the removal of foreign bodies or *movable cartilages* from the joints, our author appears to give the preference to the subcutaneous incision first devised by M. Goyraud, and more recently recommended by Mr. Liston. Now, of the ten or twelve instances in which we have seen movable cartilages taken from the joints by simple incision,

the only case followed by serious symptoms was one in which a minute vessel had been divided, from which blood escaped into the joint subsequent to the operation. We cannot see how the subcutaneous incision is to obviate such accidents, or to render them less serious. And the difficulty of removing the cartilage from the cavity of the joint by a subcutaneous incision is acknowledged to be very great, even by those who have adopted and recommended the practice.

In accordance with Bourgery, Dr. P. states, that there are three methods of remedying the inconveniences resulting from the solidification of the joint, which constitutes *true anchylosis.*

1. "To re-establish the movements of the joints by rupturing the adventitious junction between the bones.
2. "To establish a new point of motion by the creation of a false joint.
3. "To place the limb in a new position by taking out a wedge-shaped portion of bone, when it is anchylosed in a direction that renders it inconvenient or useless."—P. 88.

To these he might have added a fourth, viz.: To bring the contracted or deformed limb into a useful position by gentle and protracted pressure. We have witnessed at least two instances in which the leg, anchylosed nearly at right angles with the thigh, has, after several months, treatment in this way, been gradually straightened; not by any yielding of the anchylosed joint, but by the bending of the tibia below it, the bone yielding at the point of union between its shaft and its upper articular extremity. These instances were in growing boys of strumous diathesis.

In speaking of the treatment of *false joints*, Dr. P. appears, as in many other instances, to follow his French guide, and, in consequence, to give credit for modes of practice to foreigners which belong to the surgeons of his own country.

"M. Flaubert, of Rouen, has proposed, after resection, to unite the ends of the bones by passing a wire in the manner of a suture through the fragments themselves."—P. 94.

The foregoing statement is made by both Malgaigne and Bourgery. The former makes no mention of it in the earlier editions of his manual; but, in the edition for 1840, he speaks of it as a practice *just introduced* by M. Flaubert. Now, had Dr. P. consulted the New York Journal of Med. & Surg., Vol. I., for Oct., 1839, he would have there found an exposition of this mode of treatment, as for many years in common use in the New York Hospital, and first practised there by Dr. J. K. Rodgers, in July, 1826. There is no doubt that the practice which Dr. P. has credited to the French surgeon was suggested by Dr. Heard's paper on this subject to which we have just referred. When are we to receive our own from such authors?

In speaking of *Excision of the Upper Jaw*, Dr. Pancoast makes a remark which appears to require some qualification.

"The great improvement of modern surgery, in reference to the malignant growths of the upper maxillary bone, consists in its amputation entire at its points of articulation, instead of attempting to cut out with saws, forceps and gouges, the diseased mass alone."—P. 108.

The truth of the foregoing observation is not to be questioned, where the greater part of the bone is affected, or when the disease appears to have attacked it at several distinct points. But there are many cases in

which the malignant action is circumscribed within a very limited space; and in such it would, as appears to us, be cruel to attempt the removal of the whole of the upper jaw. Dr. P. might very properly have introduced a paragraph on *partial resections* of the upper jaw, and have accredited Dr. A. H. Stevens, of New York, for his well-known operation for removing the greater part of this bone, which was performed in 1823, in a case of what was supposed to be malignant disease. His patient, then a child, is now a member of the New York bar. Dr. P., however, has alluded to the case, in connection with operations upon the maxillary sinus, where it appears to have been taken from an article on Tumours of the Nasal Fossæ, which was published in the number of this Journal for April, 1842.

"The resection of the lower jaw, either in whole or in part," says Dr. P., "is an easier and much less formidable operation than that of the upper."—P. 112.

This assertion is by no means in accordance with our own experience. Few operations of equal magnitude and severity are performed with greater facility or with greater rapidity than Gensoul's operation for extirpating the upper jaw. In the two instances in which we have had occasion to assist in this operation, it was accomplished in a few moments, and the only vessel requiring ligature was the internal maxillary, which was seized with the fingers and secured, after the removal of the bone, without the aid of either forceps or tenaculum. The *operation upon the lower jaw* is always more tedious, attended with greater hemorrhage, and even with greater danger, especially where the operation involves the symphysis of the bone. In one instance, in the hands of a most skilful surgeon of New York, the patient, under these circumstances, died immediately after the operation, and before the surgeon had left the room, and, as we are told, apparently from closure of the glottis, by the sudden recession of the muscles of the tongue, &c., after separating them from their attachment at the symphysis of the lower jaw. Dr. P. himself has had occasion to notice, in his book, other similar catastrophes.

A serious inconvenience, in the eyes of some surgeons, after partial resections of the lower jaw, is the subsequent torsion of the chin.

"To prevent the falling of the sides of the bones inwards, Mr. Nasmyth, of Edinburgh, has devised an ingenious little instrument, a double silver case, to contain the upper and lower molar teeth, which should be made to fit on previous to the operation."—P. 113.

In a case of removal of a portion of the lower jaw, for an osteo-sarcomatous tumour, related in the N. Y. Journ. of Med. and Surg., vol. iii, for 1840, p. 357, the chin afterwards inclined slightly to one side. But on examining the patient some eighteen months or two years afterwards, it was found that the deformity had entirely disappeared. The divided ends had become firmly bound together by an intervening substance, nearly as solid and inelastic as the bone itself.

The success attending operations for *partial resection of the vertebræ*, as Dr. P. well observes, "is always doubtful," more so, however, in consequence of previous injury requiring such operation than from injury necessarily inflicted by the operation itself.

"Jæger relates six instances in which it has been done, but in two only of these with advantage. In four well-known cases, those of Cline, Tyrrel, Barton and A. G. Smith, the operation did not eventuate successfully."—P. 117.

We remember to have witnessed, in the practice of M. Cusack, of Dublin, in 1836, the case of a young woman who had had the spinous process of one of the dorsal vertebræ carried away by a gun-shot. Just after the accident, as M. C. assured us, he was enabled to introduce the point of his finger through the wound into the spinal cavity. The patient, when we saw her, had so far recovered as to be able to walk about, the wound having already cicatrized.

In speaking of resection of the *tarsal bones*, Dr. P. makes no mention of a case in which Dr. A. H. Stevens extirpated the *astragalus* successfully, after a severe compound dislocation, in 1826, probably because he found no notice of it in Bourgery. Neither Velpeau nor Malgaigne refers to it. He reports a process of his own for resection of the *first metatarso-phalangeal articulation*. The case calling for this occurred to him in 1836. We need not repeat the operative procedure. The parts afterwards anchylosed.

"The only difficulty encountered in the after treatment was the tendency of the extensor muscle to elevate the point of the toe. Should I again have occasion to excise this joint, I would prefer to divide this tendon, in case I approximated the bones, inasmuch as the necessity for its use would be greatly diminished afterwards."—P. 132.

The next or *fourth section*, occupying between forty and fifty pages, is devoted to *amputations*.

These have been so admirably systematized of late, particularly by Lisfranc and a few others, and so well described by most writers on the subject, as to have left but little room for originality. The only mode of amputation claimed as original by Dr. P., is one of amputation *at the knee joint*, described in the following quotation. The case calling for it was one of necrosis of the tibia, in a female of middle age. Cicatrization was complete at the close of the fourth week.

"*Process of the author. Three cutaneous flaps.* (Pl. xlii. figs. 2, 3, 4.)—The patient is to be placed upon the abdomen. The leg, flexed at a right angle with the thigh, is held by an assistant. The surgeon, placing the thumb and forefinger upon the condyles of the tibia at the opposite side of the leg, makes, with a common scalpel on the front of the upper part of the leg, a semilunar incision which extends as far as three inches below the tubercle of the tibia—one extremity resting on either side an inch below the joint. The flap of skin is now to be rapidly dissected towards the joint. The leg is then to be extended and made horizontal. The point of the knife is next to be entered through the skin, at the middle of the back part of the leg, an inch and a half or two inches below the fossa of the popliteal space, and carried vertically downward for the space of three inches. From the lower end of this, the knife is to be continued round on one side, to strike the line of the first or anterior incision, so as to mark out a second flap, convex downwards, and extending a little lower than that of the one in front. The lower end of the vertical cut is then united, by a similar convex sweep of the knife to the other margin of the first incision, so as to form a third flap. The two posterior flaps are next to be dissected from the fascia up to their base. The leg is now to be again flexed, and from the general loosening of the flaps already made, the insertion of the ligamentum patellæ upon the tibia will be exposed. This is to be divided across, and the joint opened upon the front and sides, so as to leave the semilunar cartilage on the head of the tibia, the crucial ligaments, as they become subsequently useful as a nidus for granulations, are to be divided at their connection with the latter bone, and the posterior ligament lastly cut. The leg, which is now loose, is to be twisted on the thigh. An assistant grasps the popliteal artery with the thumb and finger,

and the surgeon divides below, at one stroke with the knife, the remaining parts, consisting mainly of the two heads of the gastrocnemius, some of the hamstring tendons not previously cut, and the popliteal vessels and nerves. The patella is to be left in its position.

"The whole operation may be done with the scalpel; the femoral artery should be compressed with the tourniquet.

"*Dressing.*—The anterior flap is to be brought over so as to cover the condyles, and united by suture to the two lateral flaps, which will be found so considerably retracted as to fit in neatly to each other along the notch between the condyles. A few strips of adhesive plaster are to be applied, and a roller brought down from the upper part of the thigh, in order to overcome the tendency of the loosened muscles to retraction, and fix the patella near to the end of the bone."—P. 169.

Owing to the shortness of the flap, in the operation above described, one of the condyles became exposed, and furnished Dr. P. an opportunity of studying the changes that take place in the articular cartilage after amputation at the joint.

"This structure neither reddened nor became painful, so as to exhibit any coating of synovial membrane, or other appearance of organization. It became, by the end of a week, softened and pulpy on its free surface, in the same manner as occurs when the joint is subjected to the macerating tub of the anatomist. The pulpy layer, which was so soft as to leave a track when rubbed with the end of a probe, was insensibly removed with the discharges; by a continuation of the same process of softening and removal, the thin lamina of bone covering the auricular face of the condyles was completely bared of the cartilage in the third week."—P. 169.

In speaking of amputation at the hip joint, Dr. P. has made no allusion to the case of Dr. Mott, which, if not the first successful one, was the first in America.

Before leaving the consideration of the bones, we may remark another oversight on the part of Dr. P., or his prototypes, in failing to notice the practice of the late Dr. N. Smith, of New Haven, in the treatment of internal suppuration of the bones by trepanning; and, we might add, Mr. Liston's mode of treating nodes, by a free subcutaneous division of the periosteum. This latter practice we have employed somewhat extensively, and can speak of it most favourably.

Part Third. *Special Operations, or those which are practised upon complex organs in particular regions of the body.* The *first section* under this general division, occupying about forty-five pages, treats of *operations upon the eyeball and its accessory organs.* These operations are arranged into four groups: 1. Those for affections of the lachrymal apparatus; 2. Those for the protecting organs of the eye; 3. Those for the ball of the eye; and 4. Those involving the orbit and parts within not specified above. Our observations on the mass of interesting details included in this section must be somewhat brief.

Speaking of *lachrymal fistula*, and of the various modes of treating it, Dr. P. gives the following appreciation of the relative merits of Ware's style, and the canula of Dupuytren.

"The comparative merits of the two instruments have not yet, perhaps, been fully decided. With the tube the operation is rapid, but little painful, and at once finished. There is no deformity left, and though there is some risk of the contrary, it may be followed with no further trouble or inconvenience. The tube is not, however, suited to cases where there is much thickening or ulceration of the sack, as the parts will not, under these circumstances, close above it. With the style there is a mark of observation left upon the cheek; the cure may

be less complete or followed even with a fistulous ulcer of the sack, but the operation is unattended with risk, and the instrument is always under the control of the surgeon—a circumstance which weighs strongly in its favour with the profession. Mr. Travers, who asserts that he has introduced the tube fifty times with excellent success, without having been required to move it in more than two instances, nevertheless, for reasons analogous to the above, gives preference to the mode of cure by the style."—P. 187.

The removal of the tube, after having remained for a length of time impacted in the nasal duct, is occasionally an operation of exceeding difficulty. In one instance which came under our observation, in which a gentleman had worn the tube about a year, wishing to get rid of the distress which it occasioned, an attempt was made to extract it. But the surgeon, after the most patient and persevering efforts, continued for at least one hour and a half, and after inflicting much unavoidable suffering on the patient, was finally obliged to abandon the case.

In treating of ectropion, Dr. P. appears to think favourably of the attempt to cure it by excision of a V shaped piece extending through the whole thickness of the lid. In the few cases where we have seen this attempted, the edges of the wound, although properly drawn together by suture, did not unite; and the deformity consequent to the operation was worse than the original.

In speaking of artificial pupils, Dr. P., in reference to the method by "extension of the natural pupil," says, "This is a process devised by Langenbeck, in cases where the pupil is in its natural condition, and the rays of light are intercepted by a central opacity of the cornea. It consists in puncturing the cornea as in the process just described, introducing a hook and drawing one edge of the pupil aside, so as to leave it strangulated in the wound of the elastic cornea, to which it soon becomes firmly connected by adhesive inflammation. By this means a circular orifice of the pupil is changed into an ellipsoid, and brought under a transparent portion of the cornea." In attributing the original conception of this operation to Langenbeck, Dr. P. seems to have followed Bourgery, who observes:—"Créé par M. Langenbeck pour un cas où la pupille normale était interceptée par une tache centrale de la cornée, cette méthode [extension de la pupille naturelle], n'est rien autre chose qu'une application au bord pupillaire du procédé qu'il avait ajouté au décollement. Elle consiste à amener par tiraillement, dans une petite ouverture faite à la cornée, un des points de la circonférence pupillaire de l'iris. Par ce moyen on obtient une extension ou un déplacement de la pupille naturelle, la traction changeant la forme de son orifice de circulaire en ellipsoide." M. B. gives, however, no reference by which this statement can be verified; and we suspect that had Dr. P. taken the trouble to investigate this claim, he would have found that the merit of first devising the operation cannot be awarded to Langenbeck. The subject is not, however, of sufficient importance for us to detain the reader with the history of this operation, for which the materials are before us.

Dr. P., under the same head, describes a process of his own, the object of which, says he, "is to get a good-sized aperture in the iris without injuring, in the least, the lens, the capsule, or the outer attachment of the iris." The following is the author's own exposition of it.

"This is accomplished, first, in dividing the radiating fibres of the iris near their ciliary margin, by a crescentic incision made at the same time with the

puncture of the cornea; and, secondly, by extending the anterior cut from the middle of the incision of the iris to the centre of the old pupil, dividing not only the iris, but the new membrane which has closed the pupillary orifice. These incisions will have this shape (—. The first one is made with the extraction knife of Wenzel.

"The patient is to be seated in a chair under a good light, as described at page 200. The upper lid is raised by an assistant. The surgeon seated in front, depresses the inferior lid, and taking the knife in his other hand, enters the point *through the cornea at the usual place of extraction*, as soon as it is seen in the anterior chamber, the point, by bringing the handle forwards, is directed obliquely backwards upon the iris, so as to pierce it about half a line from its ciliary margin,—for, at this place, the thin edge of the lens is so far removed from the iris as to prevent its being wounded. As soon as the puncture in the iris is made, the handle is carried backward, so as to bulge the iris a little forward with the point; the knife is then carried on, dividing the iris and cornea till the point of the instrument is advanced half-way between the place of puncture of the iris and the closed pupil. The knife is then to be carefully withdrawn. If this step of the operation be neatly executed, none of the aqueous humour will escape till after the removal of the knife, and then but in a very small quantity. The incision of the cornea will be less than a fifth of its circumference, and that of the iris will have a shape concentric with its outer margin.

"The delicate probe-pointed scissors of Maunoir are then to be inserted, closed, flatwise through the lips of the corneal wound. As soon as they have entered the anterior chamber the blades are to be slightly opened, and the handles turned so as to look obliquely downwards and forwards, in order that the blade next the cornea may not injure this structure. One blade is to be carried through the puncture of the iris, behind that membrane, and the other in front, as far at least as the centre of the old pupil; the handles are then brought directly horizontal, and the second incision made by closing the scissors. If the iris is healthy and unadherent, the operation is now completed. Not a drop of blood will have escaped; a beautiful artificial pupil will be at once formed. The base of the radiating fibres belonging to the outer part of the iris having been cut, the pupillary circular fibres, having now no resistance, contract and draw upon the two loosened triangles of the iris, so as to bring their edges into a straight line, and make the new pupil widest at the central position. The shape of the pupil will be such as seen at Pl. xlviii., Fig. 15. Immediate vision will be restored if the retina is in a healthy condition. The eye, however, is to be closed, and treated for a few days as after extraction, with the exception that the temples and margin of the orbit should be covered with the extract of belladonna to keep the iris dilated as widely as possible."—P. 216-17.

Closure of the pupil, without any opacity of the capsule or adhesion between it and the iris is of extremely rare occurrence. Still, as such a condition may present itself, and it is highly important, when it does, to preserve the capsule and lens uninjured, it may be worth while to inquire how far Dr. P.'s operation is calculated to answer its design. The risk (not to say certainty) of wounding the capsule of the lens in any attempt to pass a knife through the iris, has been considered so great that the best ophthalmic surgeons reprobate any such attempt. Dr. Mackenzie says it would be evidently wrong to have recourse to the operation of *incision*, (Pract. Treatise, 2d ed., p. 734,) and recommends lateral *excision*, in such cases. This is practised by making an incision of the cornea, then pressing on the eyeball so as to cause a prolapse of the iris, and finally excising with scissors the prolapsed part. This, which is the operation of Gibson, and has been performed by Beer and De Walther, with some slight difference in the operative details, has been generally considered as best adapted

to the case under consideration, as it subjects the capsule to the least risk of injury. But Dr. P., in his operation, has recourse not only to the reprobated method of *in*cision, but he makes *two incisions*, and the second one under the most unfavourable circumstances. For both chambers of the aqueous humour being opened by the first incision, (through the cornea and iris,) that fluid must at once flow out;* and the contraction of the muscles of the ball will then bring the anterior capsule of the lens, the iris and the inner face of the cornea in complete contact. To accomplish the second incision, the points of the scissors must be forced, one between the iris and cornea, and the other between the iris and anterior capsule of the lens. Whether it is likely that this can be accomplished without wounding these parts, we leave to the reader to decide.

The new operations for *strabismus* are described at some length, and Dr. P., among others, details a process of his own; for which, however, we have not space. Under this head there is no notice of the fungous excrescences which are so apt to arise from the wound in the conjunctiva after it begins to cicatrize, and which frequently require excision; nor any allusion to suppuration between the eyeballs and its investments, consequent on the operation.

Sect. second.—The section *on the ear*, the second in this division of the work, we must pass over without much comment; observing merely that Dr. P. has *several times* performed the operation of puncturing the membrana tympani without much lasting benefit. It appears to us that the impropriety of this procedure had fairly been established long before Dr. P. entered the list of operators. We look upon perseverance in such procedures as another instance of the influence of bad example, and of the tenacity with which some surgeons hold to doubtful or injurious operative measures once instituted by distinguished teachers, even after such teachers themselves have long ceased to speak favourably of their own practice.

In the *third section*, including *operations upon the nose and nasal cavities*, Dr. P. remarks that the septum narium "is the almost exclusive seat of fibrous polypi." This statement, if true, is new to us. According to Velpeau, the fibrous tumour has its special origin in the fibrous tissue that invests the bones of the nasal fossæ, and that lies between the bones and the proper mucous tissue. In a case published by Dr. Mott, and noticed in a former number of this journal, the fibrous growths were attached to the floor of the nostril. We find nothing in this section in reference to operations for the removal of encysted tumours, which frequently form about the alæ nasi, and in the removal of which the surgeon, unaware of their attachment, is very apt to lay open the nasal cavity, and in this way permanently deform the visage of the patient.

Dr. P. has, "on several occasions, removed by excision, carcinomatous or caruncular growths near the anterior orifice," and has generally found it afterwards necessary to plug the nostrils to arrest the hemorrhage. He also gives a peculiar mode of his own for this latter operation.

The operation for opening into the maxillary sinus, says Dr. P., "may be required for dropsy or abscesses of the sinus, or in cases of the development within the cavity of polypous tumours, fungous or carcinomatous

* If a drop remains, it will, at all events, be evacuated the moment the points of the scissors, in the second step of the operation, are introduced into the incision in the cornea, as they can occupy but a portion of the wound.

tumours;" to which we may also add, for the cure of fistulous ulcers communicating with the cheek,—a troublesome instance of the latter sort that had existed a long time, we remember to have seen heal effectually and rapidly after puncturing into the sinus through the socket of one of the teeth.

In the *fourth section*, on *operations upon the mouth and its dependent structures*, Dr. P., speaking of hypertrophy of the upper lip, leaves us no room to suppose that the affection may yield to scarification and other means of local depletion; but proceeds at once to the operative measures. We would call his attention to a case of the sort published by Dr. Detmold in the N. York Journal of Medicine and the Collateral Sciences for July, 1844. Passing over the treatment of hare-lip, cancer of the lips, and anchylosis of the lower jaw, we come to the treatment of *salivary fistula*.

"The facility and success of the treatment, as well as the choice of the method for the cure of a fistula of this duct, depend much on the fact of the orifice being the result of a wound or a recent ulcer; or, if it be of long standing, whether the skin is healthy or diseased at its margin, whether the passage of the duct on the inner side of the fistula is open or closed; or, in fine, whether the fistula is situated anteriorly or posteriorly to the edge of the masseter."—P. 247.

Having paid some attention to these fistulæ, we have seen them heal spontaneously under each of the circumstances above specified. In front of the masseter, both after incisions for the removal of tumours, involving the duct, and after syphilitic ulcers of the cheek penetrating it; behind the massiter, where fistula had followed spontaneous abscess, and where the parotid had been necessarily injured in the removal of tumours in its neighbourhood. There is, then, in these fistulæ, a much greater disposition to spontaneous cure than surgical authorities are ready to admit; and unless we find the duct permanently closed between the fistula and its natural outlet, we are disposed to believe that, in most instances, the best practice would be to trust almost exclusively to the efforts of nature. The spontaneous cure after syphilitic ulceration, it is true, requires time. But we question how far, under these circumstances, the cure is to be expedited by either setons, sutures, cauteries, or other modes of local interference.

In connection with the operation for *extirpating the parotid gland*, we have an array of most of the American surgeons who have attempted it. The day has gone by any longer to question the fact that this gland has been extirpated; yet Dr. P. has done well to note the remark of that very judicious critic and observer, M. A. Berard, who states that, out of fifty-two attempts at the extirpation of this gland, in a diseased condition, not more than five can be said to have been effectual. In Professor Pattison's lecture on this subject, published in 1833, among numerous other cases, he cites four in which the gland is said to have been effectually extirpated by Dr. Bushe, of New York. One of these four cases of reputed extirpation of the parotid subsequently became a patient of the New York Hospital. The disease had probably been originally a carcinomatous degeneration of some of the lymphatic ganglions about the neck. The extirpation of what was considered the parotid did not, of course, effect a permanent cure. When the patient was admitted at the hospital the disease had nearly surrounded his neck. As a last resort, he was advised to submit to the ligature of both carotids. The operation of ligaturing both vessels, at one sitting, was performed by Dr. Mott, if we recollect rightly, in July,

1833. The patient survived only a few hours, and in the autopsic examination, the parotid gland was found in situ.

The opinion adopted by Dr. P. that "the scirrhous affection of the gland is attended by a contraction of its capsular investment, by which the deep-seated and irregular prolongations are made to recede from their beds, so as greatly to facilitate the process of extirpation," is one the correctness of which we must confess ourselves rather doubtful. If the disease has already gone so far as to produce a condensation of the capsule, we may expect, as a matter of course, that the tissues beyond this capsule are not entirely sound.

We must now hurry by what Dr. P. has to say on extirpation of the submaxillary gland, ranula, operations on the tongue, excision of the uvula, extirpation of the tonsils, and staphyloraphy, which complete the subjects embraced in the fourth section, with the passing remark that he has given processes of his own for the removal of scirrhous tumours of the tongue by a wire ligature, one for staphyloraphy, and a third for staphyloplasty.

Section fifth, including operations on the *neck*, *section sixth*, operations upon the *thorax*, and *section seventh*, operations upon the *abdomen*, offer nothing special to detain us until reaching the close of what Dr. P. has to say of abdominal dropsy; when, to our surprise, we discover that he has entirely omitted to mention the once-neglected but recently resuscitated operations for the removal of ovarian tumours. Whatever may be our own disposition to excuse him for this omission, we fear certain of his readers will not think well of it. Surely he must have been following his French leader so closely as to have, with poor Rip Van Winkle, been actually asleep to the revolutions that have been going on about him. The Cæsarian section operations for the removal of uterine polypi, and for the removal of the uterus itself, have also been omitted; but these, it may be said, belong to another department of the healing art.

In treating on hernia, Dr. P. describes, as a means of radical cure, a process of his own:—

"*By injection.*—This process, as employed by the author, is as follows:—The contents of the hernia must be completely returned into the cavity of the abdomen, for the process is only appropriate to cases of reducible hernia, and those which are not of large size. The apparatus required is a minute trocar and canula, (Pl. lvii., fig. 7,) a small graduated syringe, capable of containing a drachm of fluid, well fitted to the end of the canula, a good-fitting truss, for the purpose of making compression. The patient is to be placed on his back; the viscera are then to be reduced, and the truss applied over the external ring, for the purpose of keeping them up, as well as to prevent the possibility of the small quantity of fluid thrown in from getting into the cavity of the abdomen. The surgeon then presses the finger at the external ring, so as to displace the cord inwards, and bring the pulpy end of the finger on the spine of the pubis. At the outer side of the finger he now enters, with a drilling motion, the trocar and canula, till he feels the point strike the horizontal portion of the pubis, just to the inner side of the spine of that bone. The point is then to be slightly retracted and turned upwards or downwards; the instrument is then to be further introduced till the point moves freely in all directions, showing it to be fairly lodged in the cavity of the sack. The point of the instrument should now be turned into the inguinal canal, for the purpose of scarifying freely the inner surface of the upper part of the sack, as well as that just below the internal ring. The trocar is now to be withdrawn, and the surgeon, again ascertaining that the ca-

nula has not been displaced from the cavity of the sack, throws in slowly and cautiously with the syringe, which should be held nearly vertical, half a drachm of Lugol's solution of iodine, or half a drachm of the tincture of cantharides, which should be lodged as nearly as may be at the orifice of the external ring. The canula is now to be removed, and the operation is completed. A compress should be laid above the upper margin of the external ring, pressed down firmly with the finger, and the truss slid down upon it. The patient is to be kept from changing his position during the application of the truss, and should be confined for a week or ten days to his bed, with his thighs and thorax flexed, keeping up steadily as much pressure with the truss as can be borne without increasing the pain, in order to prevent the viscera from descending and breaking up the new adhesions while they are yet in the forming state, or avoiding the risk of their becoming strangulated, or being rendered irreducible by the lymph effused into the cavity of the sack.

"The author has practised this operation in thirteen different cases, in but one of which was there any peritoneal soreness developed that excited the slightest apprehension, and in this case it subsided under the application of leeches and fomentations. In several of these cases a single operation appeared to be perfectly successful. In others—where the sack was larger, or the patient was less careful in keeping the truss steadily applied during the first week, or from a cautiousness in introducing, in the first cases, a more limited amount of fluid—the effect was merely to narrow the sack, rendering a repetition of the process necessary for the cure. Of the permanency of the cure, *during several years after the operation*, the author is unable to speak, most of the patients operated on being temporary residents of the Philadelphia Hospital, and passing, after a few months, beyond the reach of inquiry. While under the cognizance of the author, they were employed without a truss as labourers on the farm attached to the institution, and in no one of the cases, during this period, had the hernial tumour recurred. It would, however, be but a proper measure of precaution to direct the truss to be worn subsequently for several months, in order to confirm the cure.

"The greater number of these operations were performed by the author eight years ago, before the classes of students at the Philadelphia Hospital, but as he was able to trace the future history of the cases but for a few months only, they were not deemed of sufficient importance for publication. Very recently M. Velpeau has published a process almost precisely the same as that just described."—P. 283.

As we have somehow or other fallen into the line of pointing out omissions, we may remark again before leaving the consideration of operations on the abdomen, that we find no allusion to an operation which Dr. Samuel White, of Hudson, has called *enterotomy*, and which he many years ago performed successfully for removing a silver teaspoon from the small intestines. (See note at page 331 in the present number of the Journal.)

Section eighth.—The operations upon the anus and rectum include those for imperforation of the anus, polypous tumours of the rectum, prolapsus ani, invagination of the rectum, cancer of the rectum, hemorrhoids, abscess at the side of the rectum, fistula, fissure, and stricture of the anus.

We cannot agree with Dr. Pancoast, in believing that in the treatment of hemorrhoidal tumours, the common ligature of silk or hempen thread is inferior to the wire ligature, nor that it is any more difficult to strangulate these swellings by means of the thread than by the wire; but agree with him in preferring a combination of ligature and excision to the simple use of ligatures. The exposition of the pathology of hemorrhoids which he adopts, is far from being in accordance with our own views of

this affection: we cannot, however, stop to discuss this point here, but may refer for an exposition of what appears to us to be the true views of the pathology and treatment of this disease, to the *N. Y. Journ. of Med. & Collat. Sci.* for July, 1844.

Section ninth.—The operations upon the genito-urinary organs embrace, first, those upon the male; among which are those upon the scrotum, upon the penis, and upon the urethra and bladder, including the operations for stone; and, secondly, those upon the female, including lithotomy, suture of the perineum, recto-vaginal fistula and vesico-vaginal fistula. This section presents but little to detain us. The author's description of the operations for hydrocele, among which he gives one of his own, appears to us to be somewhat imperfect. His modification of the subcutaneous operation, for the use of variocele, by the application of a ligature to the veins of the spermatic cord, as it appears to us, is not so free from danger and inconvenience as he supposes; nor would we, as he has done, choose it in preference to the operation of Sir A. Cooper. In the comment upon his operation, to which we refer, he remarks, that

"By keeping the cavity of the veins in the grasp of the ligature thus *constantly* closed, the risk of purulent absorption from the vein below is greatly diminished, if not entirely removed," &c.—P. 314.

We have met with other similar allusions to Velpeau's doctrine of purulent absorption, in the course of this work. So long as such views have only a speculative bearing, they are not worth combating; but where they lead to improper practice, or to false confidence in certain operative procedures, it is time they were exposed. Does Dr. P. not know that after ligaturing a varix, the vessel may suppurate as well above as below the thread? If there is in pathology any fact established by the most careful and extensive observation, we hold that the occurrence of purulent cachexia, independent of any necessary previous absorption of purulent matter, is such a fact. The character of the work before us, however, does not require of us at present to enter upon the discussion of this most important question, further than to say that it is full time that the term purulent absorption, or purulent resorption, as applied to purulent cachexia, secondary abscess, and suppurative phlebitis, was entirely suppressed.

In speaking of phimosis, Dr. P. has again furnished us with a process of his own, but which we have not room to transcribe. The other subjects spoken of in this section we must hurry over, with the remark that we find, under the head of vesico-vaginal fistula, no allusion to the ingenious process of Dr. Hayward, of Boston, an account of which was several years since published in this Journal. Is this omission chargeable on Bourgery?

Before leaving the third division of the work, treating of special operations in particular regions of the body, we must observe that, in imitation of his French models, Dr. P. has omitted to speak of any operations in the course of the spinal column, as for the removal of tumours and for the cure of spina-bifida;—another rather important oversight, especially as some of our own countrymen might have here been mentioned among the successful innovators in the field of operative surgery. We have some facts of our own on this latter subject, which we may some time hereafter take occasion to present to the profession.

PART FOURTH.—*Plastic and subcutaneous operations.*—Among the operations, spoken of under this head, Dr. P. has had considerable experience. We have not room for many remarks on this division of the work. Dr. P. has here introduced several cases and processes of his own, all of more or less interest; the most of which we believe have been already published. He might, as it appears to us, have considerably enriched his department of plastic surgery, by consulting the very valuable production of M. Serre, of Montpellier, on the Art of Correcting Deformities of the Face. Had he referred to this work, we are satisfied he would have had sufficient reason to borrow not only from the text but also from the plates; and to have substituted something more feasible, as a means of supplying the loss of the lower lip, than the procedure which he has offered as his own, and which appears to be, at least in principle, little else than the revival of the rejected operation of Delpech. In reference to the lower lip, however, we may remark that, unless destroyed beyond the commissures of the mouth, there is little need of any plastic process for supplying the loss. In one instance in which we had occasion to remove the whole lip, excepting merely the commissures, as low down as the reflection of the mucous membrane toward the jaw, by extending a transverse incision at this lower level, and drawing the raw edges on either side into approximation, they united perfectly, and left the patient with a tolerably fair mouth, the commissures appearing to yield, and a sort of lower lip to be supplied, partly in this way, and partly at the expense of the stretching of the upper lip.

The parts about the face and head upon which anaplastic surgery is exercised, have multiplied considerably of late; giving surgeons opportunity to display their skill, as well as their pedantry, in the multiplication of new terms, as well as of new procedures. As to these beautifying operations, we are disposed to believe that the subjects of them are not generally left so good-looking as they are represented to be in the pictures; some allowance being usually required on account of the artist's skill in the *beau ideal.* As to the new terms, we cannot be induced to believe that *cheiloplasty*, *meloplasty*, *uranoplasty*, *posthioplasty*, *chalinoplasty*, *oscheoplasty*, &c. &c., are either more euphonous, or more generally intelligible than *lip-mending*, *cheek-mending*, *palate-mending*, *prepuce-making*, *frenum-making*, *scrotum-mending*, &c. &c.

Having now noticed such points in the work before us, as appear to be most worthy of critical observation, we have still to say a word or two as to its general character. It is neither a manual nor a thorough work of reference; yet the practical surgeon, as well as the student, will find it highly useful; going, as it does more fully than any work that has hitherto appeared in the English language, over the field of operative surgery. The omissions and deficiencies, so far as they have a practical bearing, are, after all, comparatively unimportant. The most of them, we have, perhaps, already pointed out. The work, however, has too close a resemblance to the French models to have any great claim to the character of an original production, or even of a laboured compilation; and we are disposed to believe that had Dr. Pancoast given us an honest translation of Bourgery, with notes and emendations, he would have done himself more credit, and rendered a more lasting and acceptable service to the profession, than he has done in preparing the work under its present form.

In due time his book must meet the jealous eye of European critics. In it they will naturally seek for, at least, a full exposition of all that America has to claim in the department of operative surgery. What must be their judgment in finding that many of these claims have been omitted, others of them erroneously attributed to Europeans; and that the work, as a whole, is little else than a reflection of their own authors, errors and omissions included.

In referring to original authorities, out of their own nation, the French are, of all the people of Europe, the least to be relied on. They not only appropriate to themselves every innovation and improvement to which they can establish the slightest shadow of a claim, but so caricature the names of foreign writers, as to leave them scarcely recognizable by the originals themselves; so that whoever habitually copies them, must sooner or later be detected, in their errors, if in nothing else. Napoleon is somewhere made to define ambition as the desire to immortalize a few letters, which, after all, the world would contrive to spell amiss. This sarcasm would never had been suggested to any one who had not been a close observer of the French.

Finally, as to Dr. Pancoast's style, we may observe that without the least pretension to elegance, it is sufficiently clear and perspicuous; and generally correct. We have detected a few such errors as the use of *lays* for *lies*, *flatlings* for *flatlong* or *flatwise*, *cornua* for *cornu*, and perhaps a few others; and a few slight errors in his descriptions, which, however, any intelligent student will readily recognize and correct. On the whole, the work in this respect, considering the evident haste in which it has been prepared, is by no means objectionable; and as to its mechanical execution, it is highly worthy of credit. J. W.

ART. VIII.—*Traité Clinique et Pratique des Maladies des Enfants;* par MM. RILLIET et BARTHEZ, Docteurs en Médecine, &c. &c. *Tuberculizations.* Tome troisième. Paris, 1843. pp. 743.

Clinical and Practical Treatise on the Diseases of Children. Tuberculization. By MM. RILLIET and BARTHEZ. Third volume. Paris.

HAVING, in the last number of this Journal, presented an extended analysis of the two first volumes of this admirable treatise, we would at present direct the attention of our reader to the third and last volume, which well deserves a separate examination. With the exception of about one hundred and fifty pages at the end of it, which contain a short account of entozoa, and an appendix consisting of three chapters, severally devoted to some interesting and valuable remarks upon the physiological condition—a subject of much importance, and especially so in the diagnosis of the diseases of children—to an exposition of the proper method of examining sick children, illustrated by some of their own cases arranged in a tabular form, and to some practical advice with respect to the administration of medicines to children—all of which are well worthy of careful perusal,—this volume is occupied with the subject of tuberculization, that dreadful scourge of the human race, so peculiarly destructive in the earlier years of life, and to which, as

occurring among children, special attention has only within a recent period been given.

In their preliminary remarks, MM. Rilliet and Barthez define tuberculization to be the deposit of tuberculous matter in an organ; to the consumption which succeeds this, in whatever organ it may take place, they extend the name of tubercular phthisis, instead of restricting it to the pulmonary form; to the inflammation which precedes or is the consequence of it, they give the name of tuberculous inflammation. They maintain, and rightly, as we think, that "the great majority of the scrofulous are affected with tubercles, in different quantities, in the external or internal organs, and, most generally, in both at a time. * * Besides, when a lesion called scrofulous, does not coincide with tubercles, it would be necessary to prove that it really is scrofulous, which no one has been able to do," and that, therefore, it would be better to abolish the term scrofula entirely, and substitute for it tuberculization, which has a definite meaning, and cannot lead to misapprehension and doubt. Having thus "defined their position," they enter upon the consideration of tuberculization in general, a disease, whether acute or chronic, more common in childhood than at any other period of life. A description is first given of the principal forms of tubercles, manifesting themselves either in the acute state, as miliary tubercles and what has been called yellow infiltration, or in more elementary or earlier stages, as gray granulation, gray infiltration—which it is impossible to separate from the gray granulation—gelatiniform granulation—described by Laennec, in which description the authors think it impossible not to see an acute tuberculous pneumonia mingled with gray gelatiniform infiltration—yellow granulation and what has been called tuberculous dust (*poussière tuberculeuse*) to which as occurring in the lungs attention has been directed by M. Andral. This last consists in very small, numerous, white or yellow points, not sufficiently close together to constitute a yellow surface, but looking more as if they had been sowed through the tissue, which is almost always invaded by an acute or chronic inflammation, sometimes by gray infiltration. As it has never been met with except in organs presenting other forms of tubercle, and differs from miliary tubercles only in size, and is occasionally collected together in such a manner as to form masses, the authors conclude that its tuberculous character cannot be denied, and that, from the fact that the tissue in which it was seated exhibited either acute or chronic inflammation, or gray infiltration, there is a manifest relation between these forms of tubercle and chronic pneumonia. To the question of the relation of tubercles and especially of gray granulations with inflammation, the authors next direct their attention, after having first examined what is the state of the blood-vessels in tuberculous lungs; an examination which has led them to conclusions, differing materially from those generally received, at least as regards the semi-transparent gray granulations, in which they find or appear to do so, "that the veins and pulmonary arteries are very penetrable (by injections) whilst, on the other hand, the small bronchi are obliterated, an important fact, for, in this last respect at least, the gray tissue would seem to resemble pneumonia, in which the bronchi are also only in part permeable." Vol. iii. p. 21. They admit that this requires further evidence.

Be this as it may, the elucidation of this point is rendered more important by the answer to the question proposed by the authors in relation to

the connection between gray granulations and chronic inflammation. After discussing the opinion of M. Andral, who says that "he has followed them from the moment when they take an uniform reddish colour without increased consistence, to that in which, becoming gray, they are of a semi-cartilaginous hardness," and after presenting examples in support of their view, MM. R. and B. conclude,

"We are well aware that our descriptions are not identical with those generally given of chronic pneumonia; but in no instance have we been able to discover a tissue corresponding with those descriptions; on the other hand, we here find a number of examples of an alteration which is not gray infiltration, nor gelatiniform infiltration, nor carnification (a lesion which the authors have elsewhere described as probably chronic pneumonia), nor acute pneumonia, but of which the characters occupy a middle place between the first and the last lesions, resembling more sometimes one, sometimes the other. It is to this tissue that we give the name of chronic pneumonia, because it appears to us to have its origin evidently in an acute or subacute inflammation. We have never met with it in any but tuberculous children. It is probable, also, that gray infiltration may succeed a chronic inflammation, itself the sequel of acute inflammation: this, however, is not necessary, for the inflammation may be from the outset chronic, and the infiltration may be original, as is proved by the greater frequency of it than of chronic pneumonia." They farther conclude, "that the crude yellow tubercle only succeeds inflammation through the necessary intermedium of semi-transparent gray tuberculous matter and perhaps of the dust." Vol. iii. pp. 26, 27.

In the serous membranes, tubercles manifest less tendency to softening than in other situations, and it is a remarkable fact, which the authors have for their part observed to be invariable, that the perforation of the serous membranes resulting from the softening of tubercles is occasioned by the softening of those seated on their external surface, which also have a tendency to perforate the natural canals with which they are in contact. As regards the general distribution of tubercles in the different organs, the more nearly children approach the adult age, the more generally do we find tubercles limited to the lungs and intestines, and present the same aspect as in the adult. In younger children, we are told, tuberculization often follows different laws. Thus, at times, we find all the organs studded with small, gray granulations, which, if united in one organ, would form a considerable mass, but disseminated throughout, they do not profoundly alter any one: or instead of these, miliary tubercles of an uniform size in all the organs, constituting a larger mass than in the previous case; or, in a third set of cases, considerable quantities of yellow granulations, in several organs, causing at times a degree of disorganization which is surprising. These three forms may be partial or general, the latter most frequently partial, the others more frequently general. In effect, "as a general rule, the number of organs invaded is greater in children than in adults, and certain organs which at a more advanced age are rarely tuberculous, are considerably so at the age we are studying." Vol. iii. p. 45. "The organs which most frequently present tubercles, are also those, in general, where tubercles are most numerous. (These are, in the order of their frequency, the lungs, bronchial glands, then at a long distance the mesenteric or abdominal glands, the small intestines, &c.) The tendency manifested by the organs of children to be tuberculous simultaneously is very great." Vol. iii. p. 49.

The law which was laid down by M. Louis, that no tubercles will be

found in other organs unless they are met with in the lungs does not hold good in the case of children. Indeed, his own observations were made upon individuals over fifteen years of age. M. Papavoine had already pointed out this fact, for in fifty cases of tubercles in children, twelve presented none in the lungs. Of three hundred and twelve cases reported by MM. Rilliet and Barthez, one-sixth or forty-seven had the lungs free from this adventitious deposit. "It is quite frequent," say they, "to find phthisis exclusively thoracic, and it is not rarely exclusively abdominal. Finally, it is sometimes only encephalic and it is only as an exceptional case that we see advanced tuberculization of the abdomen and of the encephalon at the same time, and not of the chest." Vol. iii. p. 53.

An account of the general symptoms, forms, march, duration, diagnosis and complications of the tuberculous disease is followed by some remarks upon the prognosis. In answer to the question, is tuberculization curable, the authors say that its cure is very rare and entirely exceptional. They do not, however, at all call in question the possibility of it, "it being placed beyond doubt by the cicatrices of tuberculous excavations," and by cases "in which positive and undeniable signs of it have disappeared." These, however, referred to partial cases. Where it is general and acute, its curability is very doubtful; perhaps the difficulty of making a diagnosis of such instances would prevent our ascertaining a cure if such were made. Perhaps in the chronic form the prognosis is more favourable, as it is of such cases, that the cures have been reported: for themselves, however, MM. R. and B. say, "that though some tuberculous children have left the hospital, to many the disease, alleviated but not cured, was destined sooner or later to be fatal. We scarcely recollect a single case in which the cure appeared to us complete." Vol. iii. p. 85.

The causes of tuberculization next occupy attention. They believe that a predisposition to its attacks necessarily exists, that it must be congenital, and that though generally hereditary, it is not necessarily so as daily experience evinces. It may be modified during life by the circumstances in which the individual is placed, and indeed may never be called into activity. At any rate, those who assert that this predisposition may be acquired, must first prove that it did not already exist. The causes which have a tendency to render active this predisposition are inheritance—the authors believe that this cause alone may determine the development of the disease without the intervention of any other occasional cause, or at least of any which are not so obscure as to be inappreciable—anti-hygienic circumstances, among which are deterioration of the air habitually breathed, constant exposure to humidity of the atmosphere, bad and insufficient food, sedentary occupations, onanism, and, in patients situated as were those observed by the authors, prolonged residence at the hospital. The authors think, and with reason, that too much stress has been laid upon the operation of each of these separately, no one of which is indispensable, while they are evidently very efficient when acting together, producing a vitiated condition of the blood, and consequent imperfect nutrition of the system. Another set of causes which may awaken the predisposition to tubercles, is anterior diseases. The operation of these is most carefully studied in the pages before us, but as we have several times had occasion to refer to their influence when studying the diseases themselves, as variola, rubeola, &c., we will not here repeat the observations then made. "Inflammation may be a cause of tuberculization,"

say the authors; "pneumonia and entero-colitis are those phlegmasiæ which most frequently determine this disease. It appears to us, however, that their action is less frequently exerted than that of the anti-hygienic causes; besides we find that it is rather rare that alone they are sufficient to cause the appearance of tubercles; they are especially active in the cases of children which have been subjected to the action of debilitating circumstances." Vol. iii. p. 112. Whooping-cough may, under the same circumstances, terminate in the deposit of tubercles in the lungs and bronchial glands; how it acts, it is impossible to say. Typhoid fever very rarely, if ever, is a cause of this deposit. The conclusions of the authors that tuberculization is more frequently met with between the ages of six and fifteen and in the female sex, agree with those previously announced by M. Papavoine. "We remark, in conclusion," say they, "that most of the causes are debilitating, and that the others, exciting at first, are followed by the formation of tubercles in consequence of the secondary debility they induce."—Vol. iii. p. 129.

The consideration of these different points is followed by an excellent article on the treatment of general tuberculization, and especially on the best method of preventing the development of the predisposition and the outbreak of the disease. Our space will not admit of our dwelling longer upon these general considerations, and we must hasten to notice some of the more important matters connected with the occurrence of tubercles in particular organs. We commence, in the order of the book, with those of the bronchial glands.

Tuberculization of the bronchial glands, which is almost peculiar to childhood, is, at this age, both frequent and serious, and gives rise to symptoms with difficulty distinguishable from those due to pulmonary phthisis. The symptoms which characterize it are the result of the pressure they exert, in consequence of their greater or less increase of size, upon the surrounding organs.

"Thus by compressing the superior vena cava, they cause œdema of the face, dilatation of the veins of the neck, violet-colour of the face, hemorrhage into the great arachnoid cavity; from compression of the pulmonary vessels may result, hæmoptysis (which is rare among children, except from rupture of a vessel), and œdema of the lungs: when the pneumogastric nerve is compressed, there may occur changes in the tone of the cough and voice, paroxysms of cough resembling those of pertussis (rarely, however, attended with whistling inspiration or vomiting), and attacks of asthma entirely unusual among children: by pressure on the air-passages are produced intense, very persistent and, at times, peculiar toned sonorous rattles, and the circulation of the air is prevented, causing an obscurity of the respiratory murmur, which may also be due to the œdema arising from the pressure on the vessel. * * * The production of these symptoms, which are not always present, nor all at the same time, is subordinate to the position of the glands, and to their development in certain directions in preference to others."—Vol. iii. pp. 199, 200.

Besides this, by acting as conductors of sounds, either normal or anormal, within the chest, these glands thus enlarged may lead to errors of diagnosis in respect to the diseases which may be actually existing in the chest. As to the causes of this form of disease, the authors have not observed that any of those mentioned, when speaking of tuberculization generally, are particularly liable to produce it. They have found the glands, in the centre of which the tubercles were seated, with evidences of acute inflammation, but this was unquestionably secondary: at other times,

they have seen "besides these deposits, a firm, almost semi-transparent, gray tissue, generally looked upon as a chronic engorgement, and which is, in reality, either a chronic inflammation, or gray infiltration," preceding ordinarily the yellow tubercle. Farther than this, the investigations of the authors have not extended, so as to be able to pronounce upon the connection between these appearances in the glands and their inflammation.

The next chapter is devoted to the consideration of tubercles in the lungs, which are studied most carefully, as their importance fully warrants. We can only present, however, a few of the points upon which much stress is laid, and which are illustrative of the peculiarities of the disease as witnessed in childhood. All the forms of tuberculous matter may be developed in the lungs. Gray granulations are met with frequently in tuberculous lungs, as often on one as on the other side, more generally in the upper than in the lower lobe, usually in considerable quantities, sometimes without the presence of any other form, very rarely so, however, in one lung alone, when the other is entirely free from tuberculous matter of any kind. Gray infiltration, which is rarer than the granulations, increases in frequency with the age of the children, from one in fourteen cases, between one and two and a half years, to one in three or four, between eleven and fifteen years. It is more abundant in the upper lobes, and sometimes exclusively confined to them, rarely, however, invading a whole lobe. In this form of the disease, the large bronchi, even to the third and fourth divisions, present very often an intense inflammation, accompanied sometimes with partial dilatations, so as to resemble a collection of little cavities in the midst of the gray infiltration. We have already had occasion to notice the authors' opinions in reference to what they consider chronic pneumonia. Tuberculous dust, (*poussière*,) of which a few examples have been collected, in two of which it was the only kind present in the lungs, is met with in the midst of the gray infiltration, and of acute and chronic pneumonia. It is much more frequent between eleven and fifteen years, occurs more usually in the upper lobes than in the others, and generally in but one at a time. Somewhat less frequent than the gray, and occurring under the same circumstances, yellow granulations are found in about one-fourth of the children with tuberculous lungs and rather more frequently between three and ten years, than at any other age. Miliary tubercles invade the lungs the most frequently of all the forms, being met with in about two-thirds of the children, chiefly between the ages of eleven and fifteen, and after that between one and two years, rather more often on the right than left side, frequently on both, and generally more abundantly in the upper than the lower lobes; in more than one-third of those which had miliary tubercles, they were the only kind. Yellow infiltration manifests itself externally by yellow plates on the surface of the lungs, extending inwards and surrounded by miliary tubercles or yellow granulation, with a tendency to unite with the tubercles of the bronchial glands, or occupies the interior of a lung, or even a whole lobe, "situated sometimes at the extremity of a dilated bronchus, of which it closes the cavity, and in which it remains naked without being softened," having made its way through from without by progressive enlargement of its dimensions, and at a later stage being softened and forming a tuberculous cavity: it is met with in about one-third of the cases of tuberculous lungs, and somewhat more frequently between the ages of one and two and a half years than at any other time. Generally, equally often deposited in the

right or left lung, it is only found in both lungs at a time in one of nine cases. "It is a singular fact that children between one and two and a half years of age present yellow infiltration in the right lung much oftener than in the left, but at all other ages oftener in the left than in the right. We shall see that an analogous difference exists with regard to caverns."—Vol. iii. p. 230.

In about half the children in whom this was observed, it was limited to the superior lobe, in a fourth to the inferior, and in the other fourth it was distributed between two or three. "Softened tubercles are encountered more frequently in the lungs than in the other organs," and generally in the interior of caverns or in the midst of considerable masses of yellow infiltration. They are much more common from eleven to fifteen, and from one to two and a half years, than during the intermediate time, and oftener occur in the right than the left lung, scarcely ever in both at a time. "The structure of caverns does not essentially differ in the adult and the child. * * * The caverns, especially in very young children often present a disposition entirely different from that which we have just described in adults. Thus a whole lobe, sometimes even a portion of the neighbouring lobes also, is entirely converted into a vast yellow infiltration, in which we behold the bronchi, the vessels, and even the parenchyma disappear. In the centre of these masses, the tuberculous matter, softened throughout a greater or less extent, and partly evacuated through the largely ulcerated bronchi, has left an anfractuous cavity lined in almost all its extent by enormous half-softened tuberculous fragments. If these are removed, a red membrane analogous to that in other caverns, is observed, raised by vessels either empty or filled with clots: elsewhere every thing has disappeared, even the pleura, which can no longer be discovered. These caverns are the result of the softening of the yellow infiltration alone, and could not be attributed to eliminatory inflammation developed in the pulmonary tissue, seeing that this no longer exists at the centre, and that at the points of the surface where it is in contact with the tuberculous matter, this last is in a crude state."—Vol. iii. p. 233.

As regards frequency, caverns are less often met with in children than in adults, "less than one-third of the children presenting them, one in three cases between one and two and a half years, less than one in five between three and five and a half, less than one in three between six and ten and a half, and less than one in two between eleven and fifteen. The frequency of tuberculous excavations in the youngest children is explained by the greater frequency of yellow infiltration at that age, and by the facility with which these large tuberculous masses soften themselves at their centre, (as shown above)."—Vol. iii. p. 235.

In the older children, the caverns, which seem to follow the same laws as those of adults, are rather more frequent on the left than the right side, in the younger, where they seem to follow the laws governing the yellow infiltration, on the right than the left; in the older, they are most frequently met with in both lungs at a time, very rarely so in the younger. They occur one half oftener in the upper than the lower lobe, in children generally, but four or five times oftener in the older, while in the younger they are relatively more frequent in the middle and inferior lobes.

Cicatrization of caverns is, we are told, perhaps more rare in childhood than at any other age, still its occurrence cannot be called in doubt, as it

is generally manifested externally, though not always, by a wrinkling of the pleura, with a more or less marked depression, as in adults.

As regards the secondary lesions, we have already noticed the bronchitis which attends the yellow infiltration. Another form is met with, where caverns exist, attacking the large bronchi, and again where there is considerable pulmonary tuberculization, formed of isolated, crude tubercles. It is often very intense here and is at times even accompanied with ulceration of the bronchial mucous membrane, "due to the severity of the inflammation or to the presence, perhaps, of that muco-purulent liquid with which the bronchi are constantly in contact."

The authors take much pains to estimate the value of the physical signs to aid in the diagnosis not only of the tuberculous affection of the lungs from other lesions of these organs, but of each form of that affection as far as it can be done with any reasonable prospect of success. They lay down clearly the results of their own experience, but do not, for one moment, attempt to conceal the difficulties which will meet the observer at each step. We cannot attempt an analysis of this interesting article nor of that which relates to the rational symptoms. Two of these which are so important in the adult lose all their value in the child, especially when very young, viz., expectoration, which is almost always absent under six or seven years, though after that it may exhibit the same important indications as in the adult, and hæmoptysis, (a form of expectoration, it is true,) which is very rare in children, almost always wanting at the commencement of the disease, and when it appears generally occurring suddenly at a late period of the attack, being then fatal.

In the chapter on tuberculization of the pleura, the authors consider tubercles of that membrane and pleurisy and pneumothorax in tuberculous individuals. Tubercles may occur either within or externally to the pleura, in the first instance causing compression of the lung, but rarely softening and never perforating the serous membrane, in the other case, giving rise to tuberculous layers, causing ulceration of the pleura, communicating freely with the bronchi through perforations of the lungs, or forming large tuberculous masses by uniting themselves with a tuberculous infiltration on the surface of the lungs and even with the tuberculous bronchial glands and the masses in the lungs at the same time. This affection rarely commences with acute symptoms, and, if it does, soon subsides into the more usual chronic, insidious form, which advances gradually but certainly and is finally fatal rather in consequence of the co-existence of general tuberculous disease or of the occurrence of some acute complication, than from any cause directly referable to the disease in the pleura.

As to pleuritic inflammation in tuberculous individuals, it was always a serious affection in the cases observed by the authors, occurring at a late period in children who were already labouring under advanced phthisis and evidently hastening their death. "Pneumothorax is not very rare among children in the course of pulmonary tuberculization. It occurs, generally, in cases in which tubercles are very numerous, but it is much more rare to meet with perforations at the level of caverns in children than in adults." They may, however, be found in these situations, or they may result from the union of glandulo-pulmonary tuberculous masses, or from the rupture of an emphysematous bulla.

Tuberculization of the pericardium is very rare, having been observed but ten times in three hundred and twelve cases, and only twice present-

ing any degree of gravity; that of the tissue of the heart itself, the authors believe to be infinitely rare.

As regards tubercles and ulcerations of the larynx, the authors observe, that whenever a child, evidently tuberculous, complains of pain in the larynx, the voice becoming rough, veiled or partly extinct, the cough being at the same time hoarse, we may almost certainly announce that it is attacked with ulcerations of the larynx, seated on the vocal cords, provided, however, that these symptoms are not accompanied with paroxysms of suffocation or that the throat is not affected with pseudo-membranous inflammation. They believe with M. Louis, that the ulcerations are caused by the irritation of the secretions from the bronchi and caverns passing over the mucous membrane of the larynx, because they occur almost exclusively in children who expectorate, because they are more numerous as the expectoration is more copious, and because the bronchi are, in these cases, gorged with a fetid, grayish liquid. The same causes give origin to ulcerations in the trachea in tuberculous cases.

Tuberculization of the peritoneum is, like that of the pleura, studied under three heads. 1st. Peritoneal tuberculization; 2d. Acute peritonitis in tuberculous individuals, whether tubercles exist in the peritoneum or not; and 3d. Chronic peritonitis in tuberculous individuals. Tubercles occurring in the cavity of the peritoneum, like those met with in the cavity of the pleura, have no tendency to perforate the serous membrane, while those external to it tend to penetrate into its cavity and also into the intestinal tube. Vomiting, a symptom frequent in acute peritonitis, is entirely absent here, while diarrhœa, more or less copious and frequent, was present in every case, though this might be accounted for by the fact that either ulceration or softening of the mucous membrane of the bowels was also observed in all.

Acute peritonitis, in tuberculous cases, generally appeared at an advanced period of the disease, hastening the death of the sufferer, and manifesting itself sometimes by evident symptoms of inflammation, at other times remaining latent. Chronic peritonitis may exist independently of tubercles in the peritoneum, coinciding with tubercles in other organs and parts of the body, and giving rise to the belief of the existence of tubercles in the peritoneum.

Contrary to the generally received opinions, MM. Rilliet and Barthez state, that tuberculization of the mesenteric glands is far from being a frequent affection in the first period of childhood. "If we restrict the name of mesenteric phthisis to those cases in which the mesenteric tuberculization is considerable, only about one-seventh of all the children having tuberculous mesenteric glands will be included and only about one-sixteenth of all who present tubercles in some part of the body. If we give that name to all in which are found commencing or but slight tuberculization of the mesenteric glands, we still include one half the cases of tuberculous children, for tubercles have been found there in about that number."—Vol. iii. p. 406.

They further state that this disease "never or almost never attacks children under three years of age, that it is lighter the younger the child is, that it reaches its maximum of development between 5 and 10 years, after which it is very rare." Vol. iii. p. 322. And that the reason why it has generally been considered so frequent among children, is that other diseases, as tuberculous peritonitis, enteritis, &c., have been mistaken for it.

Of the mucous membranes, the only one in which tubercles have been

observed by MM. Rilliet and Barthez, is that of the gastro-intestinal canal. They were met with only of the miliary form, either crude or softened, commencing beneath the mucous membrane, either within or external to the muciparous glands, and resulting in ulcerations. The semi-cartilaginous granulations, said by M. Louis to be very frequent in adults, have never been seen by the authors, which is somewhat remarkable, seeing "that, elsewhere, these granulations are, in general, much more common in childhood than at any other age." The chapter on gastro-intestinal tuberculization is a very interesting one, and in it the authors show how impossible it is to distinguish the symptoms caused by these tuberculous ulcerations from those due to chronic enteritis, in which no tubercles are found, and how serious and fatal a disease it is as well from its own consequences as from the complications which are liable to attend it.

Tubercles of the liver, which are much more frequent in children than in the adult, in whom they are very rare, have been observed in the form of miliary tubercles and gray granulations in about one-fourth of all the cases, though they have been revealed during life by no special symptoms. As regards the fatty degeneration of the liver, the authors remark that it is far from being peculiar to tuberculization, it being scarcely more frequent in tuberculous children than in those who are non-tuberculous; nor is the intensity of this lesion proportioned to the extent of the tuberculization. The authors have almost exclusively met with it, when independent of tubercles, in the continued fevers, in the following order as respects frequency, variola, rubeola, typhoid fever and scarlatina. When it occurs without hypertrophy of the liver, it gives rise to no special symptoms. The youngest children are evidently most disposed to it, those with few or no tubercles more so than those which are very tuberculous, the liability to it in these last increasing with the age. Girls are more liable to it than boys when it is connected with tubercles, less so when these are absent. In the kidneys, tubercles are much more often met with among children than among adults. All forms are not equally frequent, miliary tubercles being most often observed and then gray or yellow granulations. It is much more rare to encounter large tuberculous masses or to see the kidneys reduced to the state of cyst or cavern. Nor does tuberculization of the kidneys often reach a high degree of intensity or constitute an important alteration, for when advanced, it generally coincides with an advanced state of the general disease, and in general is only an epiphenomenon upon this, having little influence upon its march and termination, and indeed, as far as we at present know, revealing itself by no especial symptoms. Nor have we any means of diagnosing tuberculization of the spleen, where the morbid deposit is very frequently and abundantly made, and in all its forms. Being ignorant of its functions and not meeting with hypertrophy of it, we are left entirely in the dark as to the symptoms occasioned by its tuberculization.

The concluding one hundred and thirty pages on tuberculization are devoted to the consideration of this lesion in connection with the nervous centres; and in them we have an admirable, perhaps unsurpassed, account of the pathological anatomy of meningo-cephalic tuberculization and of the secondary lesions of the encephalon, of the symptoms, diagnosis, causes, prognosis, march, treatment, &c., of acute hydrocephalus or tuberculous meningitis, of the history of tubercles of the brain, of the latent tuberculization and inflammation of the brain and of its membranes, and of tubercles of the bones of the cranium with the accidents they may

cause. It would be impossible to attempt, in a small space, an analysis of this chapter or even to hope to be able to present more than a sketch of the authors' views upon these important subjects.

The meningeal tubercles are always seated, with the exception of one case, as far as the authors' experience goes, externally to the arachnoid, in the meshes of the pia mater, and more frequently at the convexity than at the base of the brain. It is, indeed, rare to meet with them at the base without finding them also at the summit. The cerebral tubercles may occur primitively in the cerebral substance, and are more frequently met with in the hemispheres than in the optic couch and the central parts generally. They are about as frequent, too, in the cerebellum as in the cerebrum. The authors have no doubt of the granulations of the meninges being tuberculous. Inflammation of the meninges is a frequent affection in tuberculous individuals whether the tubercles are found in the meninges or in other parts of the system, and independently of the meninges, and presents the same characteristics in both cases. In addition to the tubercles which are generally, in these cases, found in the pia mater, the evidences of inflammation are met with, characterized by a secretion of concrete pus or of false membranes in the pia mater, which is thickened, yellowish or greenish, friable and sometimes adherent to the surface of the brain; this last presents a white, creamy softening of its central parts, occupying, in the great majority of cases, the septum lucidum, the fornix, &c., due probably to the infiltration of serosity, (which is in greater quantity than natural in the ventricles,) through the ventricular linings. At the same time there is a deposit in the other organs of tuberculous matter somewhat advanced, or which has put on an acute form. Meningitis is incomparably more frequent at the base than at the summit of the brain, and it is common to meet with it at the base alone.

In order to give a general idea of the symptoms which characterize tubercular meningitis, we will here reproduce from the authors a synoptical table which contains its prominent symptoms and those of simple meningitis, from which it is very important to diagnose it.

Tubercular Meningitis.	*Simple Meningitis.*
At the commencement headache varying in intensity, vomiting, constipation, slight acceleration of the pulse. In the great majority of cases, preservation of the intelligence.	At the commencement, very intense headache, excessive agitation accompanied with screams, preceded or followed by coma or stupor, prolonged chilliness, followed by high fever, frequent, copious, bilious vomitings, with or without constipation.
Appearance that of a light disease.	Appearance that of a severe ataxic disease.
Insidious commencement.	Sudden commencement of a severe acute disease.
March rather slow, irregular, with alternations of amelioration and aggravation, diminution of the frequency, and irregularity of the pulse; nervous symptoms, varying in form, continuance and severity, agitation, in general slight, often calm delirium.	March rapid, aggravation progressive and incessant, often persistence of the febrile movement, nervous symptoms of the same nature, except the agitation, which is *excessive*, and continues till death, agitated delirium.
Duration rather long, rarely less than seven days, and sometimes beyond fifteen, twenty, forty days.	Duration most generally very short, continuing then thirty-six hours, rarely prolonged beyond the fourth day. —Vol. iii. p. 519.

The authors state they have never met with a case of tubercular meningitis terminating in a cure, a result which is in accordance with the experience of most recent observers, and which the improvements in diagnosis only tend to render more certain. Among the symptoms upon which great stress is laid in the description of this disease is the condition of the pulse; we are told by MM. R. and B. "that in a considerable number of cases of all kinds of diseases simple or complicated, acute or chronic, they have scarcely found the pulse at the same time irregular and permanently diminished in frequency except in the tuberculo-inflammatory affections of the brain and its dependences."—Vol. iii. p. 502.

Tubercles of the brain itself present so many differences in their march, relations, &c., that it is very difficult to trace a general description of them. MM. R. and B. divide their sketch, which is founded upon some thirty-four cases, twelve of their own and the others extracted from various sources, into three parts,—chronic cerebral tuberculization, commencing during good health, or perhaps with tuberculous diathesis, marked by violent and repeated convulsions, either accompanied or not with headache, vomiting, &c., and followed by muscular feebleness, paralysis, &c., death resulting either from the progress of the disease, or from some acute affection, after three or four months or longer,—chronic tuberculous hydrocephalus, which may be the consequence of the former, presenting as its first symptom, in rare cases, an increased volume of the head, more generally the nervous symptoms above noticed of chronic cerebral tuberculization, occurring almost always after the age of two years, generally between four and nine, and continuing for months—and finally cerebral tuberculization, revealing itself by acute symptoms. This is generally preceded by symptoms indicative of local or general tuberculization, commences with violent and quickly repeated convulsions, sometimes followed by profound coma soon ending in death. When this does not occur so rapidly the convulsions alternate with different cerebral symptoms, as headache, contractions, partial paralysis, strabismus, &c. Its duration is from two to thirteen days. The authors can find no relations between the seat of the tubercles and of the convulsions, though occasionally the latter are unilateral when the tubercles are so. They are inclined to attribute the convulsions, in great part, to the ventricular effusion which takes place in these cases; they state that in all the cases of contraction which they observed, a symptom almost never observed at the commencement, but peristent afterwards, the cerebral substance was softened around the tubercles. In relation to the diagnosis of the disease, we find this remark:

"We have elsewhere stated that an explorative puncture appeared to us the sole means of distinguishing arachnoidean hydrocephalus from ventricular hydrocephalus. We are the more inclined to counsel this procedure, as since the printing of our second volume, we have become acquainted with a very interesting case published by Dr. Plaisant,* in which the evacuation of a copious effusion of sanguinolent serosity into the grand arachnoidean cavity, was attended with the happiest result. The method followed by him (he makes a large incision) appears to us much more dangerous than that which we propose: and as the child was cured, this induces us to insist upon the utility of this operation."—Vol. iii. p. 567.

Latent tuberculization of the meninges and of the brain, may exist in a certain number of cases, as shown by MM. Piet and Green, with whom

* Gazette Médicale, April 25, 1840, p. 269.

the authors agree "that, in a certain number of cases, the meningeal granulations give rise to no symptoms, that they may or may not be accompanied with chronic inflammation, and we will add," say the authors, "with *acute inflammation;* at the same time we have seen the symptoms of the most clearly marked meningitis exist without a trace of cerebral or meningeal inflammation."—Vol. iii. p. 579.

With the exception of mournfulness, changes of character and disposition, and sometimes convulsions, which may extend back for several months, indicating the probable commencement of cerebral tuberculization, all the other symptoms, as coma, convulsions, &c., say the authors, present themselves only immediately before death, and therefore we can do nothing to arrest the disease, except by treating symptoms as they arise, and attending to the adoption of hygienic rules likely to favour an improvement in the health.

The concluding article of this chapter relates to tuberculization of the bones of the cranium, the authors referring to the admirable paper of M. Nélaton for a description of the anatomical alterations, and contenting themselves with an account of the phenomena occasioned by tubercles "developed far from the organs of the senses, or when placed in the neighbourhood of the orbitar cavity, or when situated about the ethmoid bone, or finally when they are developed in the petrous portion of the temporal bone, occasioning what has been variously called chronic, or tuberculous, or cerebral otitis by authors."

Thus imperfectly have we endeavoured to present to our readers some account of one of the most extraordinary works of the modern French school, whether we look at the patience and persevering industry with which the authors laboured to collect the materials and to reduce them to order, at the mass of incontrovertible facts which they have analyzed and recorded, or at the important, and, in many instances, entirely unexpected results, which flowed from them and which the authors have never hesitated to express, giving, at the same time, the means of correcting their assertions if found conflicting with the observations of future students. We do not hesitate to say, that, taking it under every aspect, it is, without question, the most complete and truly scientific work on the diseases of children extant, and we can, therefore, well understand why it has been authorized by the Minister of Public Instruction in France, to be used as a text-book in the schools of that country. In its language it is simple, clear and unpretending, in its management, it is thoroughly scientific and free from repetition, in its matter, it is founded upon facts either the result of the authors' own experience, or which have been published or placed within their reach, by persons in whom reliance could be reposed. In addition to these characters of the book, we must bear in mind, in estimating its value, the qualities of the authors themselves; patient, untiring research, a discriminating judgment, an undeviating adherence to their principle of stating facts alone and leaving theories to take care of themselves, and—to judge from the historical accounts of the diseases which they present—a thorough knowledge of the writings of Europeans, and, in many instances, of our own authors upon the diseases under consideration—qualities which eminently fitted them for the task they have so worthily executed and which lead us to hope that they may be spared to fulfil the promise they have given of continuing their labours in the same direction.

C. R. K.

BIBLIOGRAPHICAL NOTICES.

ART. I.—*Observations on Vegetable and Animal Physiology.* By WILLIAM L. WIGHT, M. D. Petersburg, Va., 1843: pp. 36, 8vo.

THE object avowed by the intelligent and ingenious author of the essay before us, is to arrange the phenomena which are invariably connected with organization, and designated by the general term, *life*. In its accomplishment, he endeavours, by what he conceives to be a cautious induction, 1st, to advance to the general principle which controls and directs the series of actions connected with the growth and nourishment of plants; and 2dly, to show that this same law, through the instrumentality of organs and agents adapted to each exigency, presides over the higher and more complicated phenomena of animal life. He very modestly confesses that the materials which he has collected, with no little toil and anxiety, are intended only as a rude scaffolding for future inquirers to build upon; and hopes they may be entitled to a place among those contributions which a distinguished writer has happily compared to the crops that are cultivated, not for the sake of the harvest, but to be ploughed into the land.

The well-educated physicians distributed through the states and extensive territories of America, whilst engaged in the arduous duties of an anxious profession, are, at the same time, the chief purveyors and missionaries of natural science, in nearly every department. From them the farmer, the manufacturer and the artisan are continually drawing rich acquisitions of knowledge, in a way so gradual as to be almost imperceptible, and hence seldom fairly appreciated.

The phenomena of life, in all its phases, have always been objects of primary study with the physician. They constitute topics of endless discussion and speculation with the student, and of profound contemplation at mature age. One inquirer, whose attention has been more exclusively concentrated upon the investigation of chemical laws and processes, sees that many of these may be found operating in the various processes of life. He therefore comes to the conclusion that *his* department of science is competent to explain most if not all of the secondary phenomena of life. Another fixes his mind upon other agencies of the most subtile kind, and concludes that without introducing the galvanic circle, either simple or modified, chemical changes cannot begin to act. It is the duty of the impartial investigator to view the claims of all parties, to seize upon the truths revealed and tested by facts, and reject all which have no better foundation than fanciful speculation.

We cannot do Dr. Wight justice without the most ample extracts from his treatise, and these we make with the more freedom since we know they will be welcome to most of our readers, and not the least so to our rural friends.

"When," says he, "a seed is deposited in the soil under favourable circumstances of moisture, heat and air, the following chemical changes have been ascertained to ensue. A portion of the oxygen gas of the atmosphere disappears, and an equal volume of carbonic acid is evolved.* The first indication of this change is the appearance of part of the germ called the plumula, which always ascends to form the stem and leaves; while the other part, the radicle, always descends to constitute the root. As soon as the first leaf has unfolded itself, an action directly the reverse of the one just mentioned takes place. Carbonic acid is now resolved into its original elements—one of them, oxygen, returned back to the atmosphere, while the other, carbon, is retained for the

* Saussure.

nutritive purposes of the plant. And this action goes on uninterruptedly day and night, until the whole of the nourishment contained in the cotyledons or seed lobes has been consumed. This fact, which seems hitherto to have escaped notice, may be proved by the following simple experiment. Let a seed, resting upon moistened cotton in a vessel of water, be allowed fully to develop its first leaf. If this leaf be now introduced under a receiver, and supplied with carbonic acid, it will be found to decompose this gas, and to evolve an equal volume of oxygen during the night as well as the day. If the other seminal leaves as they are successively unfolded, be treated in like manner, the same process will be observed to continue, by night as well as by day, until nothing but the enveloping capsule of the germ remains. It is sufficiently evident from this experiment that the office of the seed lobes is not only to furnish carbonic acid, but to assimilate its carbon, until the organs of plants are so far developed as to effect the same object. When the food treasured up in the seeds is exhausted, the further growth and nourishment of plants are maintained through the agency of exterior influences. These are the soil, the atmosphere and solar light. The soil is composed of silica or sand, alumina or clay, lime and organic, or animal and vegetable remains, in variable proportions.

"The atmosphere consists essentially of two gases, oxygen and nitrogen; but it contains also small proportions of aqueous vapour and carbonic acid. Light, when resolved into its constituent parts, was found by Sir Isaac Newton to be composed of seven different coloured rays, violet, indigo, blue, green, yellow, orange and red.

"The organs of plants being so far advanced as to act and to be reacted upon by these three exterior influences, we find that immediate recourse is had to a division of labour, to an economy of means suited to the simple structure of the plant. Thus the leaves no longer decompose carbonic acid at night, but enter upon their especial office, the absorption of oxygen gas from the atmosphere.

"During the day, carbonic acid is taken up by the roots, and transmitted to the leaves, when it is decomposed through the agency of light. When this decomposition is effected with proper activity, plants uniformly exhibit to our view the green tint in all its beautiful varieties. If, however, this chemical change takes place either too slowly or not at all, as is the case when the influence of light is diminished or withdrawn, the colours of plants become fainter and fainter, until they wholly disappear. For the discovery that oxygen gas was given off from the leaves of plants during the day, one of the most beautiful in natural philosophy, science is indebted to Dr. Priestly; and to Ingenhous, it is believed, for the first observation that light was essential to the process. So far, then, as the chemical changes which take place in the leaves of plants fall within the reach of inquiry, the ultimate object appears to be the decomposition of carbonic acid, the extrication of its oxygen, and the assimilation of its carbon, in the completion of which process the influence of light is essential. The keystone, therefore, of an inquiry of this kind, is the knowledge of the circumstances which diminish this influence, and of the means of increasing it. This knowledge can only be obtained by a diligent observation of the facts and analogies of nature, and by experiment. Nature speaks through her phenomena, and experiment is the mode of interpretation. Thus, in casting our view over almost any field of growing plants, we shall generally observe surfaces, of greater or less extent, where the natural green is tinted off, into shades intermediate between green and yellow. On inspecting these spots, we find that the cause and only cause of difference is the degree of moisture. Hence it appears that water, when habitually too abundant, is one of those circumstances, and a very general one, too, whose tendency is to diminish the chemical agency of light. The first observation that led me to attach particular interest to this fact was the striking contrast in the colour of two portions of a wheat field, the whole of which had been sown with the same variety of seed. One portion was immediately below a canal, in consequence of which the subsoil was kept constantly wet, by the oozing of its waters; the other was adjacent to, and parallel with it, a ditch only intervening. In the spring, and especially after rains of some

duration, the colour of the wheat on the portion next the canal approached very nearly the orange tint. As the season advanced and the surface became drier to a greater depth, this tint melted insensibly into the shades intermediate between green and yellow; but at no period of its growth did it attain the rich and pure green exhibited by the wheat beyond the drain. On farther observation and inquiry, this effect of water was ascertained to be a universal fact, as regards the nutritive or cultivated families of plants, and is familiar to every observant cultivator of the soil.* It is equally well known that the productiveness of plants growing in soils containing water in excessive proportion, as a constituent part, is generally less than that of those growing on higher and drier situations. Indeed, I believe it is generally conceded that lands moderately undulating, though they will not vie with the plains in point of the luxuriance, yet exceed them in the quality and value of their products. We all know how much the product of grain is diminished, even on uplands, when the seasons are unusually wet. Further, it is a matter of common observation and experience, that the atmosphere incumbent over wet soils is the source of all those affections comprehended under the generic term, 'bilious.' These are all facts, which have been verified by numerous observations and extensive experience.

"If we now question nature still farther, by carefully taking up plants growing under the different circumstances which have been described, placing them under a receiver, and supplying them with carbonic acid, the response will be, that those exhibiting their natural green decompose double the quantity of this gas, or impure air, and give off double the quantity of oxygen or pure air, compared with those of a fainter tint. The same answer will be given if single leaves be separated from their stems, placed in vessels of water, and exposed to the direct rays of the sun. More bubbles will be seen to collect on the green than on the pale leaves, and these bubbles have been proved to consist of oxygen gas. When plants of the aquatic class are submitted to experiment, they are found to give off more oxygen than the nutritive plants of dry soils.† These trials have been repeatedly made for many seasons, and the results have generally been accordant. They are, moreover, perfectly consistent with the well-known and long-established fact, that it is only in the green substance that the decomposition of carbonic acid occurs with compensating activity. It appears, then, by following the path of observation and experiment, we arrive at the important conclusion, that the productive powers of plants, and the healthfulness of the air we breathe, are connected in the relation of cause and effect, with that particular constitution of plants which disposes them to reflect one ray of a pencil of light, the green, rather than another. But perhaps a more striking and convincing illustration of the views here attempted to be sustained, is derived from the effects of lime when applied to the soil. Few now are disposed to question the general fact, that lime is signally efficacious in promoting the fertility of the soil. That it is inoperative, and even injurious, under particular circumstances, is likewise true; but this seeming contradiction occurs only when artificially applied; and hence should be ascribed to our ignorance of its precise mode of action, and consequently of the proper state in which it should be used. But it appears, also, from the observations of Mr. Ruffin, in his valuable Essay on Calcareous Manures, a work which will secure for its author the enviable title of a benefactor to agriculture and to mankind, that the use of lime has greatly diminished, and in many instances entirely suspended, the regular

* Whilst these observations are correct as regards the nutritive or cultivated families of plants, the converse holds true in respect of those of the aquatic classes. These are the natural inhabitants of wet soils, and are greenest where there is the greatest excess of water; that is to say, nutritive and aquatic plants affect opposite states of moisture. Hence both become pale under the same degree—a deficiency in the one case acting as an excess in the other.

† This result, connected with the circumstance that plants of both orders become pale under the same degree of moisture, affords a satisfactory explanation of the curious but well-known fact, that the bodies of marshes are healthy, whilst their borders are the reverse.

annual visitations of the ordinary autumnal diseases. These observations of Mr. Ruffin are corroborated by those of M. Purvis, who observes, 'that, amongst all the countries to which lime has carried and established fertility, there is not cited a single one where intermittent, or ague and fever prevails.' The testimony of Sir John Sinclair to the same point is equally decided. He affirms it as an established fact, that a soil full of calcareous matters never produces an unwholesome atmosphere."

Very recent investigations, made by Dr. J. W. Draper, Professor of Chemistry in the University of the city of New York, have put us in possession of much more accurate information, relative to the agency exercised by the green parts of plants, under the influence of sunlight, in decomposing carbonic acid and liberating its free oxygen. Dr. Draper has not only demonstrated that the light of the sun is the cause of the decomposition, but shows the precise rays which are the immediate agents in the operation. This he accomplished by means of a prism, the many-coloured spectrum of which he rendered motionless by the aid of a heliostate. He then fixed in the different coloured spaces, tubes filled with water impregnated with carbonic acid gas, and containing some blades of grass. Decomposition immediately ensued, and in the course of about two hours a sufficient quantity of gas was collected for examination. It was found that the tubes in the yellow, the orange and the green light, contained most gas; those in the red exhibited a much smaller quantity, whilst the tubes placed in the blue, the indigo and the violet rays, contained none at all.

The maximum of heat occurs in or beyond the red ray; the maximum of chemical action among the more refrangible colours, blue, indigo and violet; and in these spaces the decomposition of the carbonic acid fails to go on. The doctor infers, from this observation, that *it is the yellow light which is mainly active in causing leaves to decompose carbonic acid in water by the rays of the sun.*

To the result of this beautiful experiment, Dr. Draper adds another fact of great interest, namely, that the gas evolved from leaves in the process just described, appears not to be pure oxygen, but a mixture of oxygen and nitrogen in variable proportions; from 50 to 90 per cent. of oxygen being found at different times, as is shown by explosion with hydrogen gas. But although there is this great variability in the proportion of the two gases evolved, a very simple law, which directs the progress of the decomposition, may be traced. On causing leaves to decompose a known quantity of carbonic acid, the same volume of the mixed oxygen and nitrogen makes its appearance. From this it is to be inferred, that plants during this action do not only effect the fixation of carbon, as is commonly supposed, but with it they absorb a certain quantity of oxygen also. When a leaf, exposed in carbonic acid gas to the sunshine, has completed its function, it has appropriated or assimilated all the carbon, and with it a certain portion of the oxygen; the residue of the oxygen has been evolved, and with it a volume of nitrogen precisely equal in amount to the volume of oxygen appropriated by the plant.

This disappearance of oxygen and appearance of nitrogen are thus connected with each other, as necessary and equivalent phenomena. The emission of nitrogen is not to be regarded as a mere accidental result, but a regular physiological change.

The result of Dr. Draper's experiments, when summed up, demonstrates, 1st. That the light of the sun is the true cause of the decomposition of the carbonic acid gas, which takes place in vegetation, the rays of heat, and the so-called "chemical rays," not participating therein, as Graham, Johnson, and other writers on vegetable chemistry suppose. 2d. That it is the yellow light, or most luminous ray, which is mainly concerned. 3d. That leaves evolve not pure oxygen gas, but a mixture of oxygen and nitrogen in regulated proportions. 4th. That there is an extensive class of salts which is decomposed under the same circumstances, and, therefore, the phenomenon is rather to be attributed to a digestive than to a respiratory process. 5th. That this digestion is brought about in the same way as the digestion of animals, by the decay of a nitrogenized body.

A remarkable analogy, according to Dr. D.'s view, exists between the function of digestion in animals and the same function in plants. Liebig has shown how, from the transformation of the tissues of the stomach itself, food becomes acted upon, and is turned into chyle, an obscure species of fermentation brought about by the decay of nitrogenized bodies. So, in like manner, Dr. D. thinks, the dissolution of a nitrogenized body in plants brings about the assimilation of carbon. The facts he regards as indicating that the primary action of light is not upon the carbonic acid, but upon the nitrogenized ferment, the decomposition of the gas occurring as a secondary result. From this view, he thinks we may infer, that chlorophyl, the green colouring matter of leaves, is the body which, in vegetables, answers to the chyle of animals; that it is derived from the decomposed carbonic acid, through the eremacausis of albumen brought into the leaf, or of some compound of the elements of ammonia that passes up by the route of the ascending sap; and that the oxygen which disappears, disappears to bring about the eremacausis of that ferment. Under this point of view, the digestion of plants may be regarded as taking place in the following way:—There is introduced into the leaf some azotized body, formed by the aid of ammonia, that has passed through the spongioles; on this the sunlight acts, bringing about its decomposition by causing its union with oxygen; and now, if carbonic acid be present, the decomposition is propagated to its atoms; a part of the oxygen set free is expended in continuing the eremacausis of the ferment; the rest is evolved with an equivalent volume of nitrogen. The carbon thus set free unites at once with the elements of water, and chlorophyl results. But this chlorophyl undergoes continuous change under the action of the sun, and is as continually replaced; from it are formed gum, and finally lignin, and all the woody fibre of plants must have originally existed as chlorophyl, or passed through the green stage.

To return to Dr. Wight's treatise. The rationale of the operation of lime in promoting vegetation, has afforded a wide field for speculation and discussion. Dr. Wight has made some interesting experiments upon the subject, in the course of which he found that plants growing in rain water, in which carbonate of lime had been previously dissolved, gave off two, three, and sometimes four volumes of oxygen, to one disengaged by those growing in pure rain water; and for every volume of oxygen emitted, an equal quantity of carbonic acid disappeared from the jar containing it. "These experiments," he observes, "were frequently and carefully repeated with the other plants cultivated in this latitude, until it seemed to be fully ascertained that the influence of the carbonate of lime, in the process of vegetable nutrition, consists in increasing the action of plants upon the light—in so modifying their constitution as to dispose them to reflect, under the ordinary defects of climate and season, their natural green; and, by connecting this power with the other well-known events in the series, viz., the more active decomposition of carbonic acid, whereby more carbon, the basis of vegetable matter, is assimilated, and more oxygen returned to the atmosphere, we obtained, as is conceived, a consistent explanation of the action of lime, both in the promotion of the fertility of the soil, and in the restoration of the air to its purity.* Thus it appears that the chemical changes which take place in the leaves of plants, and upon which their health and vigour depend, as well as the purity of the incumbent atmosphere, are effected through the joint agency of a

* It is here proper to state that the atmosphere has been analyzed, and the proportion of oxygen found to be the same in all regions and at all altitudes. But that there must be some imperfection in the mode of analysis, arising from the small quantity of air submitted to test, or some other cause, is evinced by the following circumstances: First, that growing plants are known to be one source of compensation for the oxygen consumed by respiration, by combustion, and other natural operations; secondly, that this oxygen is derived from the decomposition of carbonic acid; thirdly, that it is only in the green substance that this process is conducted with sufficient activity to make full compensation; and fourthly, that the tendency of water, when constantly too abundant in the soil, is to counteract the formation of this green substance in plants of the nutritive class, or those cultivated for the use of man.

particular ray of solar light and an alkaline principle, forming an essential element in the constitution of the plant, and disposing it to reflect this particular ray. It appears, moreover, to be equally essential that the attractive power of this principle for carbonic acid should be so delicately balanced, so nicely adjusted, as to offer no opposing force to the absorbing offices of the roots and leaves, or to the decomposing agency of the solar beam. A substance endowed with this nicely balanced equipoise of affinities, nature provides in the green matter attached to the stems and leaves of plants; and, however well suited this wonderful provision may be to excite the liveliest emotions of gratitude, love and praise, yet it should be borne in mind, that this is but one of the countless instances of beneficent adjustment inscribed upon the pages of this beautiful volume, to direct our thoughts habitually to the Source of all wisdom, and power and goodness."

In reasoning upon the results of his experiments, Dr. Wight adverts to the well-known fact, that plants are usually of a brighter green in the morning than in the evening, thus exhibiting a striking analogy between the functions of the leaves of plants, and of the lungs of animals. In the one case, he thinks the change of the blood from a darker to a brighter tint, from its union with oxygen in the lungs, is essential to the healthy activity of all the functions of the system. In like manner, he regards the conversion of the dark green of plants, arising from the accumulation of carbon, to a brighter tint, by the absorption of oxygen by the leaves at night, as essential to the activity of the decomposition of carbonic acid by day.

In the second part of his essay, Dr. Wight treats of the "*Analogies and Distinctive features of the Vegetable and Animal Kingdoms.*" The process of assimilation in plants is, according to his views, completed through the agency of an electro-chemical arrangement, consisting of carbonic acid, oxygen and light.

In animals, however, the addition of the peculiar faculties of sensation and motion, rendered a modification of this process necessary, effected through appropriate organs, fitted to make the requisite changes upon the aliment. "Thus," he observes, "the food having been completely softened and comminuted in the mouth, is conveyed to the stomach; through the agency of a peculiar secretion, the gastric juice, it is here reduced to a uniform pultaceous mass termed chyme; from the stomach the chyme passes into the duodenum, where it is acted upon by two other secretions furnished by separate organs,—the liver and the pancreas. The bile, the secretion of the former, is a greenish alkaline substance, while the pancreatic juice reddens litmus paper, thus indicating the possession of acid properties. The moment these secretions are mixed with the chyme, a striking change ensues; it separates into two distinct substances; one, a whitish fluid; the other a yellow pulp, of considerable consistence. In tracing the aliment, then, to the duodenum, we perceive a precise and remarkable correspondence between the phenomena of vegetable and animal nutrition. In each case a striking change succeeds the contact of an acid and an alkali. In plants, we know that this union is immediately followed by the decomposition of the compound; the oxygen being given off and the carbon retained."

With the view of ascertaining the exact nature of the change which takes place in animal digestion, the elements retained and those rejected, Dr. Wight reports the following experiments which he instituted and performed.

"Experiment 1st.—The knowledge of the effects of the alkalies and acids upon the sap of plants, naturally suggested a trial of their action upon the blood of animals, and with this view a small quantity of bile was added to venous blood. The only effect was an increased tendency to coagulation; following the path which nature pursues, a few drops of acid were now added, and instantly the dark modena red of venous blood was converted into a bright vermilion. This experiment was frequently repeated, and uniformly with the same result.

"Experiment 2d.—The alkaline carbonates of lime, soda and potash were next successively mixed with venous blood. The effect of these was likewise to restore the arterial colour, though not in an equal degree, and what is deserving of especial notice, it followed without the intervention of an acid. In this respect

the effect of the alkaline carbonates resembled ordinary chemical phenomena, while that of the bile and acid seemed to be more nearly related to electrical action. The coincidence led to the following experiment.

"Experiment 3d.—A portion of gastric juice, about an ounce, was added to a saucer of milk, the quantity of bile contained in a gall-bladder was next added, and the whole intimately mixed. Into this compound the opposite wires of a voltaic pile, consisting of twelve alternations, were immersed; and, at intervals, a few drops of acid were added. In a few hours a substance similar to the white of an egg, after a little agitation, was observed to collect in the vicinity of the negative pole, and at the same time a yellowish substance, of greater consistence, gathered around the positive pole. This experiment was also frequently repeated and with an exact uniformity of result.

"When submitted to test, the white fluid exhibited a distinct alkaline reaction, and the yellow substance an equally distinct acid reaction. That the substance which collects at the positive surface contains the chyle, appears, first, from its colour, no difference having been observed between the chylous and excrementitious portion of the chyme in any part of the small intestines. Secondly, from its acid reaction. The chyle, when it reaches the thoracic duct, has a sweetish taste—a property closely connected with, if not dependent upon, the previous development of an acid. This fact is exemplified in the process of malting, and in the ripening of fruit. That the acid is mainly the carbonic, is evinced by the circumstance that carbon constitutes the substance of our food, and its union with oxygen, we have seen, is the first step towards rendering it available for nutritive or vegetative purposes. The chyle having been taken up by the lacteals, the useless residue of the chyme with the colouring matter is rejected as excrementitious. And when we consider the character of the urine it is not improbable that the white fluid or the salts are also taken up into the circulation, to be ultimately eliminated by the kidneys, when no longer of useful application.

"Experiment 4th.—On adding to venous blood the substance which had collected around the opposite wires, it was found that both of them imparted to it the colour and properties of arterial blood. This effect from the portion to which the alkalies had passed, admitted of a consistent explanation from the known action of alkalies upon the blood. But a similar effect from the other portion, or the compound of carbon and oxygen, did not accord with the action of acids, and hence militated against the conclusion that the chyle consisted essentially of carbonic acid. To ascertain whether the properties of carbonic acid differed from the others, a current of this gas was now passed through venous blood, and afterwards through arterial blood, and the result was that it heightened the colour of the former, or venous blood, but darkened the colour of the latter, or arterial blood. This effect of carbonic acid was so entirely at variance with the generally received opinion, that the experiment was frequently repeated, and with a similar result. It would hence seem that the dark colour of venous blood is derived solely from carbon."

From the results of these experiments and other considerations, Dr. Wight thinks it apparent that, in the ultimate changes through which organic matters have to pass before they are adapted to the purposes of life, there exists an exact correspondence. The object of the preparatory changes wrought upon animal and vegetable matters in the soil, is to bring carbonic acid in contact with the roots of the plant. So, in like manner, the object of the preparatory processes accomplished through the medium of the stomach, the liver and the pancreas, appears to be to bring the same elements into contact with the lacteals or internal roots of animals. The adage of Hippocrates, "Quemadmodum terra arboribus ita animalibus ventriculis," he thinks should read, "As the soil is to plants, so is the stomach, the liver and the pancreas to animals."

In considering the complex organization of the animal system, Dr. W. contends that, the lungs have been improperly classed by Bichat among the vital organs, which are invariably single, whilst the lungs are invariably double. Thus, there is one stomach, one liver, one pancreatic gland, one spleen, &c., to preside over which there is one nerve, the ganglionic or great sympathetic. Of

the animal organs we find two of sight, two of hearing, two of locomotion, &c., all supplied with two distinct systems of nerves, one of sensation, and another of motion.

In considering the changes which the blood undergoes, and especially those effected through the pulmonary circulation, Dr. W. draws the inference that the oxygen of the atmosphere effects a similar modification of the properties of the blood on the lungs of animals, as it does on those of the sap in the leaves of plants. The propriety of this inference, he thinks confirmed by experiment. For if either of the alkalies or alkaline carbonates be added to venous blood, they immediately impart to it the character and properties of arterial blood. On the contrary, if any of the acids, except carbonic acid, be used, their action will be attended with an opposite result.

"If," says he, "the question be asked, why oxygen in combination with carbon should exert a somewhat similar influence on the colour of the blood, and yet impart to it such opposite properties? the answer is, that the compounds of oxygen are frequently alkaline as well as acid, and whether they possess the one or the other of these properties can only be deduced from experiment. Thus carbon and oxygen, in the form of carbonic acid, redden, or rather heighten, vegetable colours; whereas, the compound formed in the leaves at night changes the bluish tint, resulting from the assimilation of carbon, to a pure green, exhibiting in this instance the properties of an alkali. In like manner carbonic acid imparts to venous blood a pale red colour, whilst the compound formed in the lungs with the carbon with which the venous blood coming from the general system is charged, gives to it a pure red, or the true arterial colour, a property peculiar to the alkalies; that is to say, the shades of red in the blood arising from the acid and alkaline compounds of oxygen and carbon, are as distinct as the shades of green in plants produced by similar compounds. The analogy, therefore, between the changes effected in the sap of plants and in the blood of animals, by different proportions of oxygen and carbon, seems to be complete."

Dr. W. deems it as directly and positively demonstrated by experiment, that the elements composing the sap of plants are in different electrical states. That the elements composing the blood of animals are also in dissimilar electrical states, he also thinks evinced by the fact, that when the blood returns from the lungs to the heart, and leaves the latter organ, it has been observed to be under the influence of a double force of attraction and repulsion, phenomena which can only be referred to the attractive power exerted between bodies in different states of excitement. On reaching the capillaries, when the vital phenomena are completed, and not before, these signs of excitement subside. That is, at the moment of contact, the equilibrium of the component elements of the blood is disturbed, but only for a moment, the alkali becoming positively and the acid negatively electrical.

"A question of deep interest arises. By what influence is the equilibrium again disturbed? Through what agency are the elements of the compound disunited? We know that they must be separated, since incessant change is one of the leading characteristics of life. We know, moreover, that decomposition does ensue, since, when examined with a microscope, the blood in the capillaries has been compared to a "whirlpool from which particles were constantly detached, to unite with the different solids, whilst others were separated from the solids to be thrown back into the vortex of the circulation." The answer to this question is, that the nervous influence is the power, and the only power to which this action can be referred; and the evidence in support of this conclusion is precisely of the same character as that upon which rests the necessity of every other modification by which the animal is distinguished from the vegetable kingdom. Life is disclosed to us by acts, by a determinate series of phenomena; and the acquisition of every new fact in the science of organic nature serves but to confirm the conclusion that an identity of operation pervades the whole. The organization varies in degrees of simplicity and complexity; the ultimate object and the agents are the same. Thus, in plants, the ultimate

object to be attained, with a view to the completion of the arrangements of matter connected with their growth and nutrition, seems to be the co-existence and relative adjustment of three influences, viz.: an acid, an alkali and solar light, and as their organs are placed exteriorly, there is nothing to intercept the united action of these influences.

"In animals, the co-existence of two of these identical forces, an acid and an alkali, may be recognized, but from their position in the interior of the living body, they are inaccessible to the third influence essential to the completion of the circle in plants, viz.: light: under these circumstances, a nervous apparatus is interposed and adjusted to each exigency, increasing in complexity as we ascend the scale of being, and becoming more simple as we descend. How then can we, in view of the simplicity and constancy of nature's laws, and of the invariable path she pursues in all other instances, when a particular purpose is to be attained, look upon nervous influence otherwise than as a modification of the same general or fundamental power which comprehends the phenomena of light, galvanism and electricity.

"Farther, the organs are merely the instruments of life; they are not the agents by which its phenomena are manifested. These agents are the blood and the nervous influence, and that such is their character, is evinced by the correspondences in the structure of the heart and brain, and the part the sanguineous and the nervous systems perform in combining the several parts of the organization into one efficient and harmonious whole.

"Finally. It is known that nervous influence plays an essential part in the process of digestion, and we have seen that there are striking points of resemblance between the changes which may be produced in the same elements out of the body by electro-chemical agency, and those which are affected in the duodenum. Now the proper way of inquiring after the properties of things, says the great Newton, is to deduce them from experiment.

"Such, then, is a brief and imperfect record of the evidences which lead to the conclusion that the identical link in the chain of causes which supports, through the instrumentality of a few organs, the simpler vital powers of plants, upholds also, through the interposition of a more complicated machinery, the higher and more recondite phenomena of animated beings. These evidences, it will be seen, are the answers which nature gives when interrogated by experiment; she speaks through her phenomena, and the only mode of correctly interpreting her language is that of experiment."

The chapter which, perhaps, affords the most legitimate subject for notice in our journal is that devoted to "electro-chemistry applied to pathology." In this, Dr. Wight endeavours to explain the causes of certain irregularities which often take place in the series of phenomena connected with animal life, and which lead to derangement of healthy action.

In entering upon this part of his subject, he remarks, that although the principle of electricity is made manifest in bodies by friction, by contact of different substances, as of metals, of acids and alkalies and their subsequent separation, still the experiments of Dr. Wollaston lead to the conclusion that oxidation is the primary cause of its development. The opinion of Sir Humphry Davy was, that action of the pile commenced with the contact, but was sustained by the chemical changes. Dr. W. thinks that as vital activity is known to be most energetic in the lungs, and as the current sets from the lungs, these organs may be regarded as sustaining the same relation to the vital organs that zinc does to copper in the ordinary circle.

"The oxygen of the atmosphere composes about one-fifth of the whole, and so accurately is this proportion maintained as to form one of the greatest of wonders where all is wonderful. It is the exact proportion adapted to the excitation of health. If it be increased, there will be undue excitement of the vital force. If it be diminished, the consequence will be a diminution of the actions of life below the natural standard.

"By referring now to the article on vegetation, it will be seen to have been experimentally ascertained that malaria, or the source of those affections com-

prehended under the generic term bilious, consists in a diminution of the relative proportion of the oxygen of the atmosphere. It is evident, therefore, if an individual breathes an atmosphere of this kind, that there will be a want of proportion between the blood to be oxidized and the amount of oxygen inspired. The result, though inappreciable at first, will sooner or later evince itself in the diminution of the whole series of actions, animal and vital. The heart refuses to propel the blood with sufficient activity to the capillaries, where the vital phenomena are completed. When the blood reaches the capillaries, the alternate action and neutralization of its elements will take place, but the oxygen or alkaline compound being deficient, that kind or degree of action is not excited in the nerves, in virtue of which they are enabled to effect a complete disunion of these elements. The nutrient particles are detached in less quantity and with less activity than is consistent with the well-being of the different organs, and the same is true of the noxious particles which should be thrown back into the vortex of the circulation. Thus the whole machinery of life becomes sooner or later clogged and embarrassed in its movements, just in the same manner as an electrical pile is checked and finally stopped by the accumulation of its opposite electricities.

"The liver, from its position, situated as it is at the very point of termination of the abdominal system of black blood, is generally the first organ, as might be expected, to manifest a variation in its healthy phenomena. The elements of the bile are not completely separated from the blood. The yellow colouring matter remains, and is thus diffused through the system, imparting its tint to the conjunctiva, the skin, and other tissues. The bile, thus modified in its properties, passes into the duodenum, where it meets with the chyme and the pancreatic juice. By contact the equilibrium of the bile and pancreatic juice is disturbed, but only for a moment, the alkali becoming positively and the acid negatively electrical. The equilibrium is no sooner restored than it is again disturbed by nervous influence, but as the action of this surface must correspond with the properties of the blood or of its products, the elements of the food will only be partially separated, less oxygen uniting with the carbon to form the chyle, and less of the colouring matter given off to promote the rejection of extraneous matters from the system.

"This state of things continuing, the proportion of carbon must increase, and thus the chyle, from being only in a dissimilar state with the compound formed in the lungs, will gradually pass into an opposite one. Hence the vitality of the animal system will be diverted towards the vital organs in virtue of the tendency of electricity to pass from a positively to a negatively excited surface. When the proximity is such that the tendency is brought into action, it is revealed by the events of the cold stage.

"If the intensity or quantity of vitality be inadequate to restore the equilibrium, we have the phenomena of congestion, a condition of which the Asiatic cholera furnishes a striking but fearful illustration.

"If, on the other hand, the conjoint operation of the animal and vital energies accomplish the intended result, it is displayed in the phenomena of reaction, or fever.

"If the reaction be continued from day to day, the proportion of oxygen required for permanent healthy excitation will soon be restored, and the organs will resume their healthy actions.

"When, however, the degree of oxidation is less than is necessary to make full compensation for the deficiency that has occurred, there will be a tendency to a recurrence of the paroxysms, constituting the various forms of intermittent fever.

"That periodicity is referable to this cause, appears from the fact that its resistance to the efforts of art corresponds with the length of the intervals, the quartan being more intractable than the tertian, and the tertian than the quotidian.

"Reaction, then, or quickened respiration, which is equivalent to a larger supply of oxygen, is the true internal *vis medicatrix naturæ*, since the more frequent or prolonged is the process, the less will be the liability to recurrence.

"If in the effort to restore the equilibrium, the vital force should not be properly apportioned, it is evident that some one or more of the organs will receive more than their natural quantity, and others less. To the state of excess, the term irritation has been applied, and though not the primitive, but a consecutive phenomenon in fevers, yet it may be regarded as the chief disturbing force in counteracting the salutary tendency of nature's operations.

"The events which have been described, are those which continue to be exhibited so long as the sum of vitality, when localized, is sufficient to produce an excitation above that of health.

"It is evident, however, that by habituated exposure to an atmosphere containing less than the usual proportion of oxygen, the balance of the sanguiferous system will be so far changed as to reduce the *vis vitæ* below the point of reaction. Under such circumstances, what do we observe? A progressive decline of the whole series of organic action, animal and vital—the mental and moral faculties become impaired—the countenance loses all colour and complexion—the muscles are deprived of their contractile power, and the slightest exertion is made with reluctance from the sense of fatigue that attends it. The remarkable disproportion between the volume of the vital and of the animal organs evinces, in a striking manner, the effects of a gradually increasing predominance of the system of black or venous blood over that of the red or arterial. It is, indeed, an approach to a state of vegetable existence. Such, then, is the order and such the succession of events in those affections designated by the term 'bilious.'"

Dr. W. applies his pathological views to explain the phenomena which characterize the scrofulous and consumptive disposition. After enumerating the more prominent features, he concludes that this disposition consists in the tendency to a predominance of the animal series of actions, with a proportional diminution of activity in the vital series. Scrofula, and derangement of the digestive organs, he regards as constituent parts of the same affection, and connected in the relation of cause and effect, the disposition being the cause, deranged digestion the effect. In connection with this last observation he remarks, "that during the period of growth all the energies of life are directed to the building up of the fabric. At this period the nutritive or vital powers have the ascendency, and hence the aëration of the blood should correspond with the quantity of food to be assimilated. If, then, the effects of a peculiar conformation of the chest are not counterbalanced by the respiration of a very pure air, and exercise, a derangement of the digestive functions will be the predominant affection; and will display itself by all those appearances that denote arrest of development. On the other hand, under the circumstances of pure air, nutritious food and exercise, the greater activity of the vital organs at this period will hold in check the tendency to undue action on the part of the animal organs.

"As the system advances to maturity, the nearer will the two systems of organs approach to an equilibrium. Subsequently to this period the animal series of actions gains the ascendency, and this character is preserved through the remainder of life.

"The healthy adjustment of the animal and vital series of actions being once disturbed, other changes are in progress, the tendency of which is to alter still more their modes of being. Thus the aërating surface of the lungs is constantly being lessened by the deposition of tuberculous matter, thereby increasing still more the relative excess of oxygen, while, at the same time, the total amount of this element, for the general purposes of economy, is diminished. This last mentioned result is deducible from the phenomena of hectic fever, phenomena so closely resembling those of the ordinary intermittent, as to entitle us to associate them as kindred events. Thus the symptoms of hectic fever manifest themselves, after the animal series of actions have continued in the ascendency for a certain period. In like manner when the scale preponderates in favour of the system of black blood, we have the phenomena of the bilious intermittent."

Would it not be more consonant with the present views of physiologists to ascribe the series of phenomena which mark the scrofulous disposition,—predominance of the white tissues, &c.,—to diminished decarbonization of the

blood, rather than excess of oxygen. Common observation shows us that in persons whose lungs are obstructed by tubercles, abscesses, or any other causes tending to impede free respiration, the blood is always of that very dark hue which indicates a superabundance of carbon.

Dr. Wight refers to the deleterious effects so often charged upon the preparations of mercury, when administered to scrofulous subjects. "In view of this fact," he says, "let us examine and see what is the precise mode of action of this mineral upon the system, according to the view here attempted to be sustained. Thus, if calomel be added to venous blood, and intimately mixed with it, it will impart the qualities of arterial blood. If exposed to galvanic agency, its oxygen appears at the positive pole, and the metal at the negative. In other words, the effects of the salts of mercury, when introduced into the blood, are equivalent to an excess of oxygen in the atmosphere, and, as the tendency of every excess is to fly to the animal organs, it may readily be conceived why the specific influence of this mineral should not only exasperate the symptoms of scrofula, but bring them into action when they had not been previously manifested. Farther, the alkaline carbonates exert a similar influence upon the system, but are not followed by the excessive irritability of the animal organs which attends the gradual introduction of mercury. Why? Is it not because, in addition to oxygen, these substances yield carbon to the mass of blood, thus elevating and at the same time preserving the relative electrical states of the two systems?

"Such, then," he proceeds, "is a brief general description of the distinguishing features of scrofula. If we now compare the carnation tint of complexion, the narrow conformation of chest, and the slender muscular frame of this constitution, with the expanded chest, the strongly developed muscular system, and the florid red tint of the tissues of another constitution, we are entitled, by the rules of a just induction, to infer that, in the latter instances, the animal and vital organs are in a state of harmonious adjustment.

"But the relations and proportions of the two systems of organs in the second and third dispositions, are brought more distinctly into view, when the results of organization are concentrated upon a single organ. If, for example, the brain be selected as the point of determination, we shall find that in the scrofulous constitution it will reveal itself with remarkable uniformity in the forms of mental aberration, epilepsy and other convulsive affections—affections denoting high excitement of the nervous, with diminished power on the part of the sanguineous system. The accuracy of this observation will strike every one who will note the relation and connection of the foregoing events.

"On the other hand, the equally invariable result of the same determination in the third disposition, will be an affection of overwhelming violence, such as apoplexy in its various forms.

"Paralysis again appears to be connected with a modification intermediate between the second and third dispositions."

In recapitulation of Dr. Wight's views, it may be stated, that he attempts to show the existence, in the animal system, of two distinct series of actions, first, the animal, and secondly, the nutritive or vegetative. Related to these two series of actions are two properties, namely, sensibility and contractility, or tonicity. Sensibility, arising from the joint influence of oxygen, or the red globules, and nervous power, corresponds with positive electricity; whilst contractility or tonicity is derived from the joint action of carbonic acid or pale globules and nervous power, and corresponds with the negative electricity. To the augmentation or diminution of one or of both these properties, he conceives, may be referred all the phenomena of deranged action.

The order and succession of events in those affections included under the general term bilious, he states as follows:

"1st. Want of proportion between the blood to be aërated and the quantity of oxygen in the atmosphere. Secondly. Diminution of the whole series of organic actions, animal and vital. Thirdly. Concentration of animal vitality

upon the vital organs, in virtue of the tendency of electricity to pass from a positively to a negatively excited surface. Fourthly. Congestion, or the various forms of reaction.

"2d. The order and succession of events in the scrofulous constitution are, First. Excess of oxygen in the atmosphere, considered relatively to the organization of the individual. Secondly. Predominance of the animal series of actions. Thirdly. Corresponding diminution of those of the nutritive or vital organs.

"3. The highest state of vitality in both systems of organs constitutes the character of the third disposition.

"To discriminate between these three dispositions and their modifications, and to apply the appropriate means for their readjustment, when disturbed, are the elevated and responsible province of the physician, and if medicine may ever be reduced to an exact science, it does appear to me it will be accomplished by the wisdom of the profession, on the principle of the electro-chemical theory. I will content myself with suggesting that the alkaline carbonates seem to be indicated, when the object is to elevate the actions of both systems to their healthy standard; whilst carbonic acid, taken into the stomach in the form of Seltzer water, appears to be the appropriate agent for allaying the tendency to undue action on the part of the animal organs.

"Such, then," he continues, "is a rude and general, though, it is hoped, intelligible sketch of electro-chemistry in its application to physiology and pathology. Whether it reconciles the various theories hitherto proposed, or accords with the established results of practice, it will be for others finally to judge. Were there, however, no other argument in its favour, the simplicity with which it explains the phenomena of health and derangement, as well as the operation of remedial agents, ought, it would seem, to entitle it to our earnest meditations. But it appears, moreover, to be deducible from a careful observation and comparison of phenomena in both kingdoms of organic nature, the process having been to commence with the simplest, and ascend by analogy and experiment to the most complex form in which life is exhibited.

"The way, therefore, to examine it, is by considering whether the experiments I propound do prove those parts of the theory to which they are applied, or by prosecuting other experiments which the theory may suggest for its examination.

"Throughout the process my greatest anxiety has been to avoid a departure from the severity of the inductive method, from a deep conviction that it is the only mode of arriving at any truth, whether natural, moral or intellectual.

"In no other way can we forward that desirable event, when, to use the figurative language of a great poet, 'Truth, though hewn like the mangled body of Osiris into a thousand pieces, and scattered to the four winds, shall be gathered together limb to limb, and moulded with every joint and member into an immortal feature of loveliness and perfection.'" G. E.

ART. X.—*A Practical Treatise on Midwifery; exhibiting the present advanced state of the science.* By F. T. MOREAU, Officer of the Legion of Honour and of the Order of Leopold; Professor of Midwifery and of the Diseases of Women and Children in the Faculty of Medicine of Paris; Physician to the Lying-in-Hospital of Paris; Consulting Surgeon to the King; Member of the Royal Academy of Medicine, and of several learned societies. Translated from the French, by THOMAS FORREST BETTON, M. D., and edited by PAUL B. GODDARD, A. M., M. D., Lecturer on Anatomy, and Demonstrator in the University of Pennsylvania, etc. etc. With Eighty Plates, comprising numerous separate illustrations, 4to. pp. 235 of text, and 80 of letter-press explanatory of the plates. Philadelphia: Carey & Hart, 1844.

THE work of M. Moreau would be a valuable one to the student of Midwifery, were it only in consequence of the very excellent lithographic illustrations by which it is accompanied; especially those exhibiting the direction and axes of

the pelvis, its various malformations, and, by different sections, its form and dimensions; with the relative position of the several organs and subjacent parts; those presenting different views of the uterus, the fœtal circulation, the relations of the fœtal head with the superior strait in the several positions, the mechanism of natural labour in the different positions of the vertex, face and pelvic extremity, and those pointing out the manner of applying the hand and instruments in cases of artificial labour. These illustrations, which are in general one half of the size of life, and several of the full size, are all beautifully and accurately executed, and convey a perfectly clear idea of the objects represented.

But excellent and valuable as these illustrations are, they do not constitute the only recommendation of M. Moreau's treatise. The text of the author contains a full exposition of the precepts and practical rules of the obstetric art, agreeably to the views and clinical experience of the best modern accoucheurs, more especially of the continent of Europe. With some few, and these by no means important exceptions, the volume before us may be followed as a very safe guide to the theory and practice of midwifery by the student, while, on many points of a practical character, it will be consulted with much profit by the practitioner.

The treatise is divided into three parts, and these again are subdivided, each into numerous sections, chapters and articles.

The first part treats of parturition. Under this head are comprised a very minute description of the organs concerned in that process with their respective functions; an account of the abnormal states of the pelvis and of the genital organs, particularly of the uterus, and finally a description of the ovum, with its gradual development and a brief sketch of its physiology.

Each of these subjects is very ably treated, and more fully than in the generality of practical treatises, but not more so than their importance demands. To the accoucheur an intimate acquaintance with every particular connected with the structure and functions of the organs concerned in parturition, and with the changes which occur in them and in the fœtus, from the period of conception to the termination of utero-gestation, is essential to enable him properly to fulfil all the duties required of him.

The author's account of the physiology of the fœtus is the least satisfactory portion of the first section. But from the obscurity with which the whole subject is involved, and the great difficulty of arriving at positive conclusions in regard to it, little better could be done than to present, as M. Moreau has, the leading views of physiologists, the errors of which it is much easier to detect than to present others bearing more of the evidences of truth.

The second part of the treatise treats of the functions of reproduction, including menstruation, generation and pregnancy, with the signs of the latter, equivocal and sensible.

The chapter devoted to the examination of the signs of pregnancy and of their relative value, is a very able and interesting one. M. Moreau makes no mention of kiestine as an indication of pregnancy. The chapter closes with some sensible remarks on the duration of utero-gestation. Although M. Moreau considers that two hundred and seventy days is the ordinary duration of pregnancy, yet, in some cases, it may terminate somewhat within, and in others, be protracted somewhat beyond this period. He adduces a case in which it was probable that the period extended to eight hundred and twenty-eight days.

Part the third treats of the expulsion of the product of conception or labour. The author occupies ten pages with an exposition of the various classifications of labours proposed by Solayrès, Baudelocque, Gardien, Flamant, Lachapelle, Naegele and Dubois. That adopted by M. Moreau is a slight modification of M. Dubois.

A good classification of labours is certainly of some importance, as affording a powerful aid to the memory in the acquisition of obstetrical knowledge. It would be out of place here, however, to enter upon a discussion as to the principles upon which the classification should be founded. It is much to be regretted, that a general agreement upon this subject could not be entered into

among obstetrical teachers throughout the world. The adoption of a new classification, and often of one essentially dissimilar from those of all preceding writers, renders it difficult to refer to and apply to any given case, the facts and experience accumulated by the leading practitioners of different countries.

The first section of part third is devoted to a consideration of natural labours, the phenomena of which are minutely and accurately detailed, and the mechanism of labour in the several positions of the vertex, of the face, sides of the head and of the pelvic extremity, are very ably described, and with much clearness:—the clearness of the description being not a little increased by the splendid pictorial illustrations by which the text is accompanied.

The third chapter of this section treats of labours that become accidentally natural by the spontaneous evolution of the fœtus.

The fourth and concluding chapter describes the conduct of the practitioner during labour, and the course to be pursued upon the occurrence of certain anomalies in its progress. M. Moreau notices the employment of ergot in cases attended with diminution or suspension of the uterine contraction, and his remarks in regard to it are replete with sound judgment. He is no advocate for its use. "We have remarked," he states, "that the uterine contractions produced by it have a peculiar, and, as it were, pathological character: that instead of being intermittent like the normal contractions, they are continuous with periods of exacerbation; if, therefore, the contractions are permanent, they must interrupt and even suspend the utero-placental circulation, and may cause the death of the fœtus. In this case the death of the fœtus should not be attributed to any poisonous qualities of the ergot, but to a purely mechanical effect, caused by the continuous contraction of the uterus. Whatever may be the cause of death, this fact alone should induce us to use the medicine with extreme caution." "In one case we saw it excite acute, permanent, and, as it were, convulsive contractions, without the slightest advance of the head; it was subsequently necessary to deliver with the forceps a dead child, which, at the moment of the exhibition of the ergot, was full of health." The effect here mentioned is by no means a rare result of the action of ergot,—the whole uterus is thrown into violent tonic contraction and the body of the fœtus is firmly grasped by it, and in such a manner as to prevent its escape from the uterus, while, at the same time, its life is destroyed and the mother made to suffer a considerable increase of pain.

In describing the proper position of the female during labour, M. Moreau remarks, that, "in England and in the United States, where English manners and customs are observed, women are delivered in bed, resting on their left side, with their legs and thighs flexed, and their knees separated by a cushion; there *they generally refuse to allow any examination*, and *the accoucheur* is sent for, *to be, as it were, merely a spectator of a process left to nature.*" We cannot imagine the source from which the author has derived so ridiculous a statement, and we feel no little surprise that so respectable a teacher should have ventured to make it, when he could easily have satisfied himself of its falsity by a reference to the works of Dewees, Meigs and other American authorities, in which the necessity of a cautious examination, to determine the nature of the presentation and the condition and progress of labour, is as strongly insisted on as in any of the European treatises, while, by the American obstetricians generally, it is always fully carried out in practice. The translator and editor of M. Moreau's work, by allowing the misstatement to pass without contradiction, would appear to give to it their assent, which we are sure was not their intention.

The second section of part third treats of artificial labours. The author considers them under four divisions. 1st. Those accidentally artificial. 2d. Those essentially artificial, the mother and fœtus being in both cases well formed. 3d. Those essentially artificial in consequence of the malformation of the mother or fœtus, and 4th. Labours rendered artificial by anomalies.

The whole subject of artificial labour is treated in a masterly manner. The circumstances of each class of cases, rendering a resort to artificial means for the delivery of the fœtus essential to the preservation of the life of the mother, and

often of the child also, are pointed out with great clearness; while the kind of manual or instrumental assistance demanded in each case is carefully examined, and the mode of its application plainly described, the whole being illustrated by a series of lithographic plates well adapted to throw light upon the instructions given in the text.

In regard to the induction of premature labours, in the author's opinion, the only case which can justify a resort to it, would be that of a pregnancy of seven months, with a pelvis having a diameter of at least two and a half inches, or at most three inches, for then, the biparietal diameter of the head not being more than three inches, we should have the same chance as if the delivery took place at full term, through a diameter of three and a half inches. He does not think it advisable, in case of the death of the fœtus. Its provocation in chronic diseases, the danger of which is daily increased by pregnancy, and which, from their very nature, must produce death before the natural termination of gestation, seems to him unworthy of serious discussion, until general opinion is definitely settled on the value of the treatment.

From a careful study of this portion of M. Moreau's work, the student of midwifery cannot fail to acquire a very full acquaintance with the operative branch of obstetrics, so far, at least, as it can be taught in books, and with the leading rules which should govern the practitioner in determining upon the propriety of a resort to manual assistance or instruments, and upon the nature of the assistance demanded in each particular case.

The third section of part third treats of the delivery of the after-birth. The remarks of the author on this subject are sound and practical. He is no advocate for leaving the placenta to be discharged by the action of the uterus, provided no serious hemorrhage occurs, and does not consider its putrefaction within the uterine cavity to be attended with no further inconvenience than the generation of a disagreeable odour. As we consider this subject to be one of great importance, and in regard to which dangerous views are entertained by a few of our cotemporaries, we shall present the following extract from the section before us.

"It is important," M. Moreau remarks, "to determine how long it is proper to wait before proceeding to artificial delivery in cases of retained placenta. Some writers recommend four, five, six hours, or even several days. This practice is very erroneous: there may result from it either a slow, but constant hemorrhage, which will exhaust the woman, or (cause) greater difficulty for the accoucheur on account of the contraction of the os uteri. Experience has convinced us that *two hours* are sufficient to arouse nature from her state of stupor; if, after this time, the stimulants we have administered do not excite contractions, we do not hesitate to effect, without delay, artificial delivery." "The dangers of the manipulations practised on the genital organs have been exaggerated; when these dangers exist, it is because the operation has been performed by unskilful hands, and we ought not to ascribe to it that which is to be attributed to the awkwardness of the surgeon alone."

When there exists an abnormal adhesion of the placenta, "the ancients, fearing the production of contusions, lacerations, in short, of more or less dreadful accidents, from excessive manipulations of the female organs, recommended patience. They even asserted, that when the efforts of nature were incompetent to effect the expulsion of the placenta, this body is either absorbed or destroyed by putrefaction, and carried away in fragments by the lochia. Although this practice has been revived by some moderns, it cannot be *too warmly condemned*, because it exposes the woman to a series of very dangerous symptoms, and may even prove fatal. No one can have more confidence than ourselves in the resources of nature; but we also believe that, if patience is a quality necessary to the accoucheur, it has its limits." "Whenever the placenta remains in the uterus, two classes of accidents, one primary and the other secondary, may manifest themselves. To the former belongs hæmorrhage. A partial separation of the placenta taking place, the woman may lose a quantity of blood, which, without being considerable, may terminate in fatal collapse." A very striking case

of this is related by the author. "When the woman loses no blood, the placenta is gradually detached, but it becomes putrid and communicates a pestilential odour to the fluids which escape from the vulva. The presence of this corrupted mass irritates the uterus, and gives rise to those fatal attacks of metro-peritonitis, which cannot be combated by antiphlogistics, and prove fatal to the patient, or to fevers of a character not less fatal. In this case, likewise, artificial delivery alone is indicated. We should be very wrong in reposing any confidence in the various means which have been proposed," and which M. Moreau passes in review.

"Is it possible to always extract the whole of the placenta? We have constantly succeeded in so doing. Yet Smellie and Baudelocque state that they have been more than once obliged to leave a portion of it in the uterus. When such men assert a fact we are constrained to give it credence. But even were it more frequent than it appears to be, we should never neglect every precaution to remove the smallest fragment of the placenta." "We might quote several cases in which cotyledons had remained eight, ten, fifteen successive days in the uterus without exciting any morbid phenomena, and then have suddenly produced an exhausting hæmorrhage."

"Accidents of the same kind may also supervene when coagula or fragments of the membranes are allowed to remain in the uterus." "Fragments of the secundines left in the uterus do not always excite hæmorrhage. Sometimes they putrefy and escape with the lochia, or produce phenomena of inflammation and fevers of a low type."

The fourth and concluding section treats of the conduct of the accoucheur after delivery. It comprises some very sensible remarks on the management of lying-in women and of the newly-born infant.

M. Moreau directs the child to be put to the breast as soon as the mother is sufficiently rested, within a couple of hours if she is strong and healthy. This we consider, on many accounts, an excellent practice, and are pleased to find it sanctioned by so respectable an authority. The author condemns very properly the too common practice of administering purgatives, even the simplest, to a new-born infant under the plea of expelling the meconium.

Appended to the work are two articles, the first being remarks on perforation of the perineum, and on the passage of the child through this part, read at a meeting of the Royal Academy of Medicine, June 1st, 1830; the second, remarks on a case of labour rendered difficult by the presence of a tumour in the cavity of the pelvis.

Our chief object in the present short notice of M. Moreau's work has been to give our readers a general idea of its character. We should have presented a more extended analysis of the author's views and practical directions, had we not been persuaded that the volume will speedily obtain a place in the library of every obstetrician throughout the country, to which we consider its merits justly to entitle it.

D. F. C.

ART. XI.—*Lectures on the Theory and Practice of Midwifery.* Delivered in the Theatre of St. George's Hospital. By ROBERT LEE, M. D., F. R. S., Fellow of the Royal College of Physicians, London; Physician to the British Lying-in Hospital, and Lecturer on Midwifery at St. George's Hospital. Illustrated with numerous Wood Engravings. 8vo. pp. 540. Philadelphia, Barrington & Haswell, 1844.

THE lectures of Dr. Lee present a very full and able exposition of the present state of the theory and practice of midwifery. The author exhibits an intimate acquaintance with the labours of his predecessors and cotemporaries in relation to the various particulars connected with the subject of which he treats; while, from his own extensive experience, he has been enabled to test the value of the principles and practical directions taught by the leading authorities in the obstet-

ric art, and thus to give additional force to such of their precepts as are founded in truth.

The work of Dr. Lee may be received as a very safe guide in the acquisition of a knowledge of obstetrics—the attentive student cannot fail to derive from it correct views as well of the principles as of the practical details of the art.

The introductory lecture is devoted to a succinct, but, at the same time, interesting and instructive history of the obstetric art, with a short notice of the labours of its more eminent cultivators, particularly during the last century.

The second lecture presents a clear and accurate account of the bones, dimensions and diseases of the pelvis.

To this succeeds, in lectures 3 to 14 inclusive, a very masterly exposition of the anatomy and physiology of the uterus, in its unimpregnated and gravid states—of the structure and functions of the human ovum—of the gradual development of the fœtus—the nature of its circulation, and the functions of its intestines, liver and kidneys, during the latter months of pregnancy.

To these subjects a degree of attention is given far beyond what is to be found in the major part of the practical treatises on midwifery—but by no means beyond what their importance demands. Independently of their bearing upon the principles and practice of obstetrics, there are many grave questions that the practitioner is repeatedly called upon to solve, which require an intimate acquaintance with the anatomy and physiology of the uterus before and subsequent to impregnation, as well as of the structure of the ovum, its successive stages of development, and the proper functions of fœtal life.

Dr. Lee adduces the evidence derived from examinations made by himself of the ovaries in females who had died during menstruation, and from similar examinations made by Drs. Prout, Girdwood, Gendrin and Negrier, and M. M. Webster, Shaw and Cruikshank, in proof of the occasional rupture of one or more of the Graafian vesicles, and the escape of their ova during menstruation. Since the publication of Dr. Lee's lectures, MM. Raciborski and Bischoff have asserted that this takes place invariably, and that this maturation and detachment of an ovum at the menstrual period is essential to impregnation.

Some interesting hints are offered in the 14th lecture on the mode of nutrition of the fœtus. Dr. Lee believes that, in the placenta, absorption of certain nutritious substances takes place from the maternal blood; these substances are carried along with the blood of the umbilical vein to the liver, and in circulating through the latter organ are converted into an albuminous or chylous fluid, which is poured into the duodenum, there to undergo changes similar to those which are observed in adults.

The diagnostic symptoms of pregnancy are the subject of lectures 15 and 16. They are treated by the author with great judgment, and very happily illustrated by a series of cases in which pregnancy was either concealed, complicated or feigned.

The diseases of pregnant women, including extra-uterine gestation and abortion are next considered, (lectures 17 to 20 inclusive.)

The remarks of the author on the pathology of the placenta and the agency of the placental diseases in the production of abortion are particularly interesting. The brief account of these diseases given by Dr. Lee is illustrated by thirteen cases which occurred under his own observation.

Equally interesting is the notice contained in lecture 19 of the communication of scarlet fever, measles, small-pox, syphilis and other diseases to the fœtus in utero. Dropsy of the amnion is treated of in the same lecture. This forms one of the most distressing complications of the latter period of pregnancy, and has not unfrequently given rise to dangerous errors in practice. The account given of it by Dr. Lee deserves a careful perusal on the part especially of the young obstetrician.

The twentieth lecture concludes with an investigation of the ordinary duration of utero-gestation. Dr. Lee has never known, in any case in which he has induced premature labour, in consequence of distortion of the pelvis, before the end of the seventh calendar month from the last menstrual period, the child to

survive. To what extent gestation may be protracted, occasionally beyond 280 days, he finds it very difficult to determine; he would, however, suspect some great error in the calculation where the period of gestation is said to exceed 300 days.

The symptoms and treatment of natural labour are the subjects of the 21st lecture. The description and practical directions of the author under this head are particularly accurate and judicious. Every thing necessary to be done to insure the comfort of the mother and the safe delivery of the child is clearly pointed out—and the impropriety and danger of all unnecessary interference strongly insisted upon.

Dr. Lee considers it to be all important, immediately upon the delivery of the child, to make the uterus permanently contract, to detach and expel the placenta, and to prevent hemorrhage. He does not conceive it to be a matter of indifference how long the placenta is allowed to remain in the cavity of the uterus, if no hemorrhage or other serious symptom immediately occur. On whatever cause, he remarks, the retention of the placenta may depend, "*there are no cases* in which it ought to be permitted to remain within the uterus *beyond an hour* after the birth of the child, and not so long if hemorrhage takes place. That there may be no misunderstanding upon this important practical point, he repeats, that he has never seen a case of retention of the placenta where any thing but mischief resulted from leaving it within the uterus *beyond an hour after* the expulsion of *the child*." In this statement, Dr. Lee is borne out by perhaps the majority of the best authorities in obstetrics, though it differs very essentially from the opinions of some of our fellow practitioners in this city.

The directions of Dr. Lee for the treatment of the infant after birth are, we regret to say, loose and very imperfect. There is no good reason for administering a teaspoonful of castor oil to a new-born child to facilitate the expulsion of the meconium, nor for keeping it twelve hours from the breast, its stomach being filled in the mean time with milk and water or thin gruel. These are practices from which serious injury to the little stranger not unfrequently results.

Protracted and difficult labours are the subject of the ensuing five lectures, (22 to 26 inclusive.) The various causes by which the labour is protracted or rendered difficult are accurately described, and the management of each class of cases laid down with great judgment and clearness. The impropriety of too early interference, as well as the danger of delaying assistance for too long a period, is insisted upon, while the proper rules of practice are carefully pointed out. We recommend to all young practitioners of midwifery the excellent remarks of the author on the administration of ergot.

Dr. Lee is in favour of the induction of premature labour in cases of difficult parturition from distortion of the pelvis. In this he agrees with the majority of the British and several of the continental practitioners. By having recourse to this operation, he remarks, in the early months, even before the fifth month, the Cæsarian operation can never be necessary, except in those cases in which the condition of the pelvis has not been ascertained until the full period.

The twenty-seventh, twenty-eighth and twenty-ninth lectures are devoted to a consideration of the invention and use of instruments in protracted labours. The subject is very fully considered in all its details. Much good sense is exhibited in the author's remarks upon the circumstances under which a resort to instrumental assistance becomes proper, and the rules for the application of the forceps are full, clear and precise. In regard to the condition and period of the labour in which alone instruments are to be employed, the views of Dr. Lee accord with those of the leading obstetricians of Great Britain; they differ somewhat, however, from those held by many of the continental and American practitioners.

In the twenty-ninth lecture is presented a tabular view of 127 cases of difficult labour, in which delivery was effected by the operation of craniotomy, with the results in reference to the mother.

The causes, symptoms and treatment of preternatural labours, constitute the subject of the next three lectures, (30 to 32 inclusive.) The views and practical directions of the author under this head will be found throughout to be clear and

satisfactory, and to correspond with those of the best authorities in the obstetric art. A tabular view is given of 71 cases of shoulder and arm presentations with their results.

The management of labours complicated with uterine hemorrhage, convulsions, inversion and rupture of the uterus and vagina, and with extravasation of blood in the labia, is considered in lectures 33 to 37 inclusive.

In a tabular form, we are presented with the results of 38 cases of uterine hemorrhage from placental presentation, and of 39 cases of severe uterine hemorrhage occasioned by detachment of the placenta from the superior part of the uterus.

The remarks of the author and the facts adduced by him in relation to uterine hemorrhage after delivery, with or without retention of the placenta, are particularly interesting.

On the general subject of retained placenta, Dr. Lee again insists, as he had done in a previous lecture, on the importance of effecting the removal of the placenta by manual assistance, if it remain within the uterus one hour after the delivery of the child.

"The difficulty," he remarks, "of removing portions of placenta adhering with more than natural firmness to the uterus, or retained by contraction of the cervix, is only increased by delaying to interfere after an hour has elapsed from the delivery of the child."

"Dr. J. Ramsbotham relates 11 fatal cases of retained placenta. Sixty-six cases of retention of the placenta requiring the introduction of the hand occurred to Dr. Collins in the Dublin Lying-in Hospital; 37 from want of proper uterine action; 19 from spasmodic or irregular action; and 10 where the placenta was adherent. In 24 of the 66 there was slight hemorrhage;—6 of the women died. Dr. Churchill states that, in 259,250 cases of labour, retention of the placenta occurred 392 times, or about 1 in 661½. In 186 cases, where the result to the mother is given, 36 died, or about 1 in 5."

Dr. Lee presents a tabular view of 34 cases of retention of the placenta, with their results. In 23 of these cases the females recovered, the placenta being retained for a period varying from a few hours to many days; in 11 cases death occurred, in 3 from hemorrhage, in 2 from phlebitis, in 1 from hemorrhage with inversion of the uterus, in 1 from peritonitis, in 1 from cerebral inflammation, in 1 death was preceded by all the symptoms indicative of an animal poison having been introduced into the system,—in 1 from phlebitis with pus in the lungs, and the pleura inflamed and gangrenous, and in 1 death was preceded by dyspnœa, with pain in the uterus,—after death the right lung was found to be covered with lymph and hepatized, with effusion in the pleura.

These facts teach us the importance of interfering in all cases in which the placenta is not thrown off by the natural efforts of the uterus within a short time after the delivery of the child. The doctrine we have heard inculcated by some of our friends, of waiting always for the expulsion of the placenta by the contractions of the uterus whenever no hemorrhage or other serious symptom occurs, is, to say the least of it, a dangerous one. With due precaution, the hand of the accoucheur may be introduced into the uterus and the placenta brought away without the least injury and with but little suffering to the mother.

The remaining seven lectures (38 to 44 inclusive) are devoted to the diseases of puerperal women. A very excellent account is given of the several forms of uterine inflammation, including the important subject of puerperal fever. The remarks of Dr. Lee on the phenomena, causes, nature and treatment of these important and extremely fatal affections of the puerperal state are marked by great judgment and discrimination. A tabular view is presented of the leading symptoms, treatment, results and morbid appearances of 160 cases of severe inflammation of the uterus and its appendages, which occurred to the author in London, from March, 1827, to the end of April, 1835.

An admirable account is given of the origin, symptoms and treatment of crural phlebitis, and some judicious remarks upon the character and proper management of the diseases of the brain and mammæ incident to puerperal women.

The foregoing brief analysis will enable our readers to form some opinion of the character of the work before us. It certainly presents a very valuable body of obstetrical principles and practice, laid down in a plain, intelligible manner. While they are well adapted for the instruction of the student of midwifery, the Lectures of Dr. Lee may be consulted by the young practitioner with much satisfaction and profit.

The wood engravings, by which the text is accompanied, are well executed, and communicate a very accurate idea of the subjects they are intended to illustrate.

D. F. C.

ART. XII.—*Report of the President and Board of Visitors of the Maryland Hospital, and Resident Physician's Report, for* 1843.—Baltimore, pp. 24.

IT is with much pleasure that we have a demonstration of the fact, that the officers of the Maryland Hospital for the Insane, have seen fit to follow the example of those of most other institutions of the kind, in the publication of annual reports.

This, the first of a prospective series, is handsomely printed, and consists of two sections, the Report of the President and Board of Visitors, and the Report of the Resident Physician. The former contains a historical sketch of the Hospital, of which we proceed to give an abridgment.

The Maryland Hospital was established in 1797. Mr. Jeremiah Yellot, of Baltimore, having given a lot of seven acres, on condition that the State legislature should grant the necessary funds for a lunatic and general hospital, that body, in 1798, granted $8000, to which the corporation of Baltimore and some benevolent individuals added the sum of $18,000.

After commencing operations, the Institution fell gradually under the care of the city authorities, and in 1808, was leased to Drs. Smith and Mackenzie. By the influence of these gentlemen, the legislature, in 1811, made an additional grant of $18,000, and in 1816 another of $30,000, with the privilege of raising $20,000 more by lottery. Drs. Smith and Mackenzie, from their profits and other private resources, furnished $60,000 more, making in all, *one hundred and fifty-four thousand dollars.*

From this time, about 40 lunatics and 150 patients with general diseases were usually accommodated.

In 1827, the State asserted its claim to the Institution; took possession of it, and placed it under the government of a president and board of visitors, whose duties commenced Jan. 1st, 1834, at the expiration of the lease aforementioned. The duties of physician were now performed by Drs. George Gibson, John M'Kenzie, J. S. Cohen, Richard Sexton, Fonerden and William Fisher, and those of matron and nurses were intrusted to the Sisters of Charity. At the expiration of another year, the physicians finding the duties incompatible with the full performance of their private practice, Dr. Stokes was appointed resident physician, to serve in consultation with the president of the board. Dr. Stokes was succeeded by Dr. William Fisher, who still occupies the place. "In 1840, the board dissolved its engagement with the Sisters of Charity, having found them good and faithful nurses, but claiming more authority in the management of the patients than was deemed compatible with the rights and duties of a resident physician; whose opinions, under all circumstances, the board deemed paramount to all others." Subsequently to 1834, the number of patients increasing, it was found necessary to enlarge the hospital. This was done by a grant of $30,000 from the State, on condition that the Institution should be exclusively devoted to the treatment of the insane, and that one-half of it should be appropriated to pauper patients, &c., from the several counties, at the price of $100 each, per annum. The hospital will now accommodate 120 patients. "The grounds contain ten acres, handsomely laid off in gardens and pleasure walks."

From the valuable report of Dr. Fisher, we learn, that they admit into this hospital, "the insane of every age, sex, station; whatever may be the cause,

the character, the complication, the inveteracy of their mutual affections,"—that the establishment is furnished with a library and those means of recreation, amusement and manual employment, which are now considered essential to all well-regulated institutions of the kind, and that, "divine worship, on Sundays, continues to be regularly attended to." "It is believed," says Dr. F., "that ours is the only institution of the kind, in the United States, in which the service of the Episcopal Church is fully and regularly used for the benefit of the inmates." This belief is erroneous. The service mentioned has been regularly performed, for many years, in the Bloomingdale Asylum, New York.

We quote the following interesting paragraph from the report:

"Two of the inmates, of literary tastes and habits, entered into an arrangement (a few months since) for the purpose of reviewing their early studies and improving themselves in general literature. A system of rules and regulations, to be strictly observed, having been signed by each, they commenced their work with a good deal of ardour, and have persevered for three months with a constancy and zeal, worthy of all commendation, and to the disappointment of some who had predicted an early failure of their enterprise. Since they commenced, they have studied thoroughly the history of the United States, the geography of Europe and America, the most important rules in arithmetic and Murray's English grammar. On Sundays they engage in Biblical studies, with questions and commentaries. In addition to the above, they devote a portion of time regularly to music. They frequently express themselves as delighted with these pursuits; complain that the days are too short for them and have been, whilst thus employed, amongst the most cheerful and happy persons in the house.—One of them is now nearly restored; the other is much improved.

"The following remarks upon corporeal restraint receive our cordial approbation. 'After all that has been said, by some of the English writers in favour of the entire abolition of personal restraint, we still believe, that the mild measures now common to all the best institutions in this country, are less irritating and offensive to the patients; and are, therefore, more effectual in securing the object in view than the constant presence of attendants, occupied in maintaining repression by muscular force, or by any intimidating measures they may be likely to employ.'"

	Men.	Women.	Total.
Patients in the Hospital, Jan. 1, 1843,	49	31	80
Admitted during the year,	41	21	62
Whole number,	90	52	142
Discharged, recovered,	"	"	45
" not "	"	"	8
Died,	"	"	8
Remaining,	45	36	81

Of the whole number, 93 were single; 25 married; 14 widows and 8 widowers.

The following table exhibits the statistics of the Institution during the last ten years:—

Year.	Admitted.	Whole No. under care.	Males.	Females.	Discharged recovered.	Discharged, not recovered.	Died.	Per ct. of recovered or discharged.	Per ct. of Death, &c. all under care.
1834	21	45	22	23	6	16	5	22·2	11·1
1835	55	73	46	27	5	25	3	15·1	4·1
1836	48	88	55	33	17	25	6	34·4	6·8
1837	64	104	57	47	22	18	10	44·0	9·6
1838	61	115	69	46	32	26	6	50·0	5·2
1839	75	126	76	50	28	27	4	47·4	3·1
1840	78	145	86	59	30	60	5	31·5	3·4
1841	95	145	89	56	49	16	7	68 5	4·8
1842	66	139	94	45	42	11	6	71·2	4·3
1843	62	142	90	52	45	8	8	73 7	5 6

Whole number under care in ten years, 649, of whom 387 were males and 262 females; whole number recovered 276, or 42·8 per cent; whole number died 60, or 9·2 per cent. There was but one death by suicide during the ten years.

It will be perceived, by an inspection of the table, that the proportion of cured has been much greater during the last few years than it had been previously.—We hope that similar success will continue to attend the efforts of our friend Dr. Fisher. P. E.

ART. XIII.—*Report of the Board of Visitors, of the Trustees and of the Superintendent of the New Hampshire Asylum for the Insane.*—Concord, 1844, pp. 32.

FROM the Second Annual Report of Dr. Chandler, Superintendent of the New Hampshire State Asylum, we glean the following statistics:—

	Men.	Women.	Total.
Patients in the asylum, June 1st, 1843,	27	20	47
" admitted during the year,	48	56	104
" in the asylum during the year,	75	76	151
" discharged during the year,	42	39	81
" remaining, May 31, 1844,	33	37	70
Of those discharged, there were cured,	21	16	37
" " " died,	2	3	5

As occurs at almost every institution, some of those discharged *not cured*, were in a fair way of recovery, and would undoubtedly have been restored had they not been prematurely removed.

Civil condition of patients when admitted.—Single, 53; married, 44; widows, 3; widowers 4.

Ages at the time of the first invasion of insanity.—Under 15 years, 2; from 15 to 20, 11; 20 to 30, 39; 30 to 40, 21; 40 to 50, 20; 50 to 60, 5; 60 to 70, 6. Of those under 15 years, three were of the ages of 5, 7 and 10, respectively.

	Men.	Women.	Total.
Whole number of patients admitted since the asylum was opened, Oct. 29th, 1842,	87	93	180
Whole number discharged,	54	56	110
Of whom were cured,	27	22	49
" died,	2	4	6

The number of admissions has been greater during the warm season than during the cold; and Dr. Chandler believes this to be a true index to the proportionate number of people who actually become deranged during the two seasons.

Dr. C. bears the following testimony to the necessity of perseverance in the treatment of mental disorders.

"Several have recovered in this asylum, by continuing our exertions for more than six months, who, at the end of the first three months trial, had scarcely begun to amend."

We shall extend this notice no farther than to introduce from the report the following extract, in reference to one of the causes of insanity.

"Religious perplexity and excitement will, whenever our divine aspirations are directed by bigoted and zealous men, be ranked high among the causes of this malady.

"Three cases of 'Millerism' and one of 'Swedenborgianism' have come to us this year.

"The legitimate effects of religion upon a healthy mind are serenity, confidence, cheerfulness, submission; and its ministers were sent forth by their Divine Master 'to heal the sick, cleanse the lepers and cast out devils.'

"Fewer females than males have become insane from this cause."

P. E.

ART. XIV. *Ueber Iritis. Sechs Bücher. Eine von der Gesellschaft für Practische Medicin zu Paris gekrönte Abhandlung* von F. A VON AMMON. Deutsche nach dem Lateinischen Originale überarbeitete Ausgabe. 8vo. pp. 120. Berlin, 1843.

On Iritis, in six books; a Prize Essay crowned by the Society of Practical Medicine of Paris. By FREDERICK A. VON AMMON. Translated into German from the original Latin and revised.

THIS treatise contains the substance of M. Von Ammon's prize dissertation, with such additional facts, in relation to the pathology and treatment of the important disease of which it treats, as the subsequent experience and observations of the author, in a widely extended field of practice, enabled him to collect. The great object of the present publication is, he remarks, to make the German medical public better acquainted with the present state of our knowledge in relation to the different forms of iritic inflammation.

The treatise is one of very great merit, and deserves the high praise bestowed upon it by the committee to whom its examination was committed by the Society of Practical Medicine. It is evidently the production of a practitioner who has studied with care the inflammatory affections of the iris at the bed-side of the sick, and who, without overlooking the labours of others in the same field of observation, has, nevertheless, in describing the pathological characters, varieties, causes and treatment of iritis, depended chiefly upon the facts collected by himself. The work is altogether practical—rejecting with very few exceptions, every species of hypothesis; the author has confined himself to a plain exposition of his own experience, comparing it occasionally with that of other writers on the same disease—insisting strongly upon such points as he believes to be fully established, and directing attention to those upon which further and more careful investigation is demanded.

The six books into which the treatise is divided, treat, the 1st of the anatomy and physiology of the iris; the 2d of the nature, symptoms and treatment of iritis in general; the 3d, of traumatic iritis; the 4th, of serous iritis; the 5th, of parenchymatous iritis, and the 6th, of inflammation of the uvea or posterior serous covering of the iris.

M. Von Ammon has examined very minutely every particular connected with the anatomical structure and physiology of the iris, a knowledge of which is absolutely necessary to the acquisition of correct views in relation to the pathology of the several species of inflammation by which the iris may be affected.

In his account of the nature, symptoms and treatment of iritis in general, the author remarks that the course of the disease is more rapid and destructive in its results in summer, particularly when the season is marked by great heat and dryness, than it is in winter and cold weather generally; whether the same difference in the progress of the disease is observed in hot and cold climates, the author is uninformed.

The course of iritis is usually slow, and often very insidious. According to M. Von Ammon's experience, there exists, in some constitutions, a stronger predisposition to its attacks than in others, but in what this predisposition consists, he has been unable satisfactorily to make out. The disease is more frequent in men than in women,—this is, perhaps, in consequence of the former being more exposed, in various mechanical occupations, to the heat and glare of intense fires, which is to be enumerated among the most common predisposing causes of iritis. It is seldom met with in childhood and youth, but is of greater frequency during infancy.

M. Von Ammon has never known iritis to prevail epidemically. He has, however, observed many cases to occur, almost simultaneously, during the prevalence of dry, cold and northerly winds.

The disease is of frequent occurrence towards the close of exanthematous diseases—and after long-continued gouty, scrofulous, syphilitic, and intestinal complaints.

In iritis, the inflammation may occur originally in the iris and be confined exclusively to it, or to a portion of it: or the inflammation may extend to the iris from the *orbiculus ciliarus*, the inner surface of the cornea or other neighbouring portions of the eye, or it may attack the iris by metastasis from some remote organ.

The inflammation may affect the anterior or posterior layers of the iris, or it may be confined exclusively to the parenchyma of the organ; it not unfrequently attacks all these parts at the same time, or in quick succession.

The disease is subject to frequent relapses—particularly upon sudden changes of weather and towards the close of the disease. These relapses are of a very serious character, very generally causing a destruction of the organization of the iris.

The inflammation has been known to be occasionally marked by perfect intermissions.

According to M. Von Ammon, iritis from internal causes, attacks, most commonly, the left eye, and is always more severe and obstinate, and more liable to relapses than when the inflammation is seated in the right eye. "The cause of this appears to him to be, in some measure, the greater rapidity and force with which the blood is propelled into the vessels of the left eye, in consequence of the left carotid originating directly from the arch of the aorta."

The disease seldom passes from one eye to the other, and still more seldom does it affect both simultaneously. M. Von Ammon has, however, observed the first to occur in many instances, when one eye has suffered for a long time from iritis ceratitis, or other chronic affection, or from the effects of a wound or operation. In such cases there readily occurs, in both eyes, a chronic inflammation of the iris, with a disposition to the effusion of plastic lymph along its edge.

The author's commentary upon the diagnostic phenomena of iritis is particularly interesting.

The symptoms of inflamed iris are a change in the colour, lustre and position of the latter; morbid effusion upon one or other of its surfaces and into its substance; a change in the form and motions of the pupil; congestion of blood in the *circulus venosus;* redness of the conjunctiva, and more or less inflammation of the eyelids. To these symptoms may be added intolerance of light, pain and deceptive vision.

When inflamed, a clear, blue iris becomes changed to a light brown, and a brown iris to either a bright or dark red. The lustre of the iris is, at the same time, diminished, and the traces of its natural filamentous structure obscured or entirely destroyed. Its free edge acquires likewise an increased thickness, which, by degrees, extends towards the circumference.

A peculiar alteration in the iris is noticed by M. Von Ammon, which causes an apparent change in its position, and gives to the affected eye a slight degree of obliquity, not unfrequently producing actual strabismus. The alteration alluded to consists in the loss of the infundibular form of the iris—its free edge, in consequence of the accumulation of blood in its enlarged vessels, and the swelling of its parenchyma, appearing to approach nearer than in the normal state to the posterior surface of the cornea.

There is often, according to our author, an increased effusion of the aqueous humour of the eye, which becomes frequently turbid, causing a dimness and increased tension of the cornea.

The pigment of the iris is generally affected in cases of iritis, it being either too copiously or sparingly effused, or changed in character. When the pigment is deficient it produces a paleness of the iris, and considerable disturbance of vision; when too copious, the iris becomes darker and thickened; it is this which gives rise to the black specks so commonly observed upon the iris when it has been long the seat of inflammation.

The colour of the pigment itself may be changed. M. Von Ammon has observed, in cases of severe and long-continued congestion of the iris, an effusion of yellow pigment upon the middle circle of the iris, to so great an extent as to cause a projecting rim around the pupil; and in similar cases, in eyes of a brown

hue, he has seen the whole anterior surface of the iris to present an appearance as though it were strewed with a quantity of a shining powder, which gives to the eye a very peculiar aspect.

An effusion of lymph may occur upon the two surfaces of the iris and into its substance; the consequence of which is very generally an entire destruction of the structure of the organ. When the effusion takes place upon the anterior surface of the iris, it is usually in the form of minute transparent drops, either spread over the entire surface or confined to one portion of it. The lymph soon loses its transparency and forms finally a white or bluish white covering to the iris. When the effusion of lymph is more copious, it is slower in solidifying, and M. Von Ammon has often observed, when the lymph has filled the entire anterior chamber of the eye, many weeks or even months to elapse before it lost, in the slightest degree, its transparency.

On the free edge of the iris, the effused lymph forms a series of minute elevations, arranged either irregularly or in a regular order; occasionally filaments of lymph pass from the edge of the pupil or from one or other surface of the iris, uniting these parts together or to the cornea or capsule of the lens. Often the effused lymph forms a kind of net-work, differing in form and thickness in different cases; assuming, occasionally, the form of a membrane interposed between the iris and the cornea, similar to the *membrana pupillaris.*

Finally, in numerous cases, particularly when chronic iritis is combined with chronic uveitis, an effusion of lymph of a triangular shape takes place, with its base at the ciliary margin of the iris, and extending thence to the pupillar edge, its apex descending through the pupil and connecting the iris with the capsule of the lens.

"The effusion of lymph upon the uvea or between this and the capsule of the lens, as well as the effusion into the posterior chamber, causes, according to our author, almost invariably an adhesion between the posterior surface of the iris and the anterior face of the lens, to a greater or less extent. Partial adhesion can seldom be detected unless the pupil is artificially dilated, as the adhesion diminishes ordinarily its normal size. Nevertheless, occasionally, the expert eye of the physician alone or aided by a glass, can detect, with more or less certainty, the existence and extent of the adhesion by the diminished lustre, changed colour or thickening of the iris at the part corresponding with the adhesion. Complete adhesion of the iris with the lens is readily detected by the consequent immobility of the pupil and the cataract which ensues. In many cases, M. Von Ammon has seen the effusion of lymph extend itself to the ciliary ligament and choroid coat, the whole of the posterior chamber being filled with it."

The colour of the effused lymph is mostly of a bluish-white colour, though occasionally it is of a yellowish white. M. Von Ammon has often detected in it small black points.

When the effusion takes place into the substance of the iris, our author describes it as generally occurring at the ciliary and pupillary rings; seldom in the central. It gives rise to a swelling of the iris, particularly at its free edge, and towards the lesser arterial circle, and causes it to approach nearer to the posterior surface of the cornea. The effusion causes a striking change in the form, colour and appearance of the external surface of the iris; its lively and mobile character is destroyed, and it looks as though it were lifeless. The thickened and irregular condition of the iris is readily detected by the aid of a glass.

M. Von Ammon considers that those writers are in error who assert that suppuration never occurs as a consequence of iritis. He has observed the formation of pus to occur more especially after wounds of the iris and cornea or of the globe of the eye, and when violent shocks have been inflicted upon the whole bulb. It is met with also frequently in cases of arthritic iritis; it seldom occurs in cases of simple iritis.

The effusion of pus may give rise to hypopyon or more rarely to an abscess of the iris, which usually bursts and discharges its contents into the anterior chamber. In cases of partial iritis, M. Von Ammon has observed abscesses to form in the parenchyma of the iris, either at its pupillary or ciliary edge, in the neigh-

bourhood of the *vasa vorticosa*. These abscesses give rise to tumours, more or less prominent, usually of a yellow colour, which may be mistaken for excrescences of the iris. The ragged edges of these abscesses, after they have burst, may be seen floating in the aqueous humour—but after a time they are absorbed. At the place where the abscess was seated, lymph is effused, of a yellow, black or white colour, from which adhesions may result, between the iris and cornea, or a permanent spot may be formed upon the iris of the same colour as the effused lymph. When of a deep black colour these spots have a very close resemblance to an abnormal pupil, and as such M. Von Ammon apprehends that they have been mistaken by some writers on the disease. He has, himself, never known an abscess of the iris to cause, as has been asserted, a perforation of the iris.

Our author has never met with a primary ulceration of the iris, and has not seen an actual ulcer to occur upon the rupture of an abscess.

"Examined with a glass, not unfrequently, in cases of iritis, vessels filled with blood are seen traversing the anterior surface of the iris. The size, course and colour of these vessels differ according to their nature and origin."

These vessels are very minutely described by M. Von Ammon, but we have not room to notice all that he says upon this subject, and an abstract would not be interesting to our readers.

Occasionally, in a single case of iritis, the several periods of the inflammation and its various products may be observed at the same time; especially in cases in which the disease has relapsed; when it pursues a decidedly chronic course; when one part after the other becomes successively invaded; or, finally, when the inflammation is of a specific character. M. Von Ammon has, in such cases, seen, at the same time, anterior synochia from effusion of lymph, ecchymosis, abscess, hypopyon and melanosis. In these instances the disease always terminates in *iridauxesis*.

In the course of iritis the pupil undergoes various changes in its form, colour and the condition of its edge. It becomes often of an oval, oblong or angulated shape. There is, in some cases, myosis, and in others mydriasis. The first occurs in cases of simple parenchymatous inflammation, the second in cases of secondary iritis. These changes are the result of a modification in the vitality of the iris—of the altered condition of its parenchyma, and of adhesions between the uvea and capsule of the lens. M. Von Ammon is unable to say, from his own observations, whether particular changes in the form of the pupil are peculiar to either of the forms of iritis.

The rim of the pupil becomes commonly darker than in its normal state, in consequence of the pupillary edge of the iris being loaded with an undue amount of black pigment, which, being irregularly deposited, gives to the rim of the pupil an indented appearance.

The free edge of the iris becomes occasionally tucked inwards so as to form a circular fold, of one or two lines broad, around the pupil. The pupillary edge of the iris appears often, upon a close examination, to be irregular; this M. Von Ammon has observed when, in blue eyes affected with inflammatory irritation or chronic iritis, the black pigment is secreted in too small a quantity.

There occasionally appears a filamentous projection of one part of the pupillary margin, continued towards the centre of the pupil; this is connected with a partial posterior adhesion—where several of these projections exist, the pupil assumes a stellated form. Occasionally, at the point corresponding with the adhesion, a small, yellow projection is observed. In secondary iritis, when the inflammation is about to invade the iris, the pupil acquires a serrated margin, and an oblong form, which gradually augments in extent, and finally terminates in melanosis.

M. Von Ammon describes excrescences of the pupillary edge or ring of the iris as of frequent occurrence in chronic parenchymatous iritis. They are of a yellow or brown colour, and of different forms and sizes. They may be mistaken for yellow spots. There are often from five to ten of these excrescences. They give rise almost always to obliteration of the pupil, or to permanent adhesions between the iris and lens, and consequent blindness. The excrescences often

form upon the uvea, and, as they increase in size, pass through the pupil into the anterior chamber; very often, at the same time, small, triangular membranes form upon the anterior surface of the iris, their base being towards the ciliary ring, and their apex towards the pupil, through which it passes to the centre of the capsule of the lens; so that gradually, when several of these membranes form, the pupil becomes entirely obliterated—its edge being intimately united with the lens, and a secondary cataract resulting. In many cases, however, the pupil remains open, but assumes a stellated, or, more commonly, an oblong or triangular form.

In the commencement of the iritic inflammation there forms, upon the sclerotica, a red ring encircling the cornea. It is formed by an enlargement of the vessels of the sclerotic coat, which run in a direct line towards the cornea, and there present manifold ramifications, surrounding it with a pale red rim or circle. The redness increases with the inflammation of the iris, and as the vessels of the sclerotica become more enlarged. In a few cases, the vessels of the conjunctiva, which may be distinguished by their more intense redness, greater size, and superficial position, become enlarged upon the anterior surface of the globe of the eye, and augment the size and colour of the ring around the cornea. The vessels forming this ring frequently disappear abruptly at the edge of the cornea, and become of a paler colour towards the inner part of the bulb of the eye. The colour of the ring is of a dark red, and the whole outer surface of the eye has a lively red colour, even before the vessels of the sclerotica become enlarged.

The circle may result, occasionally, from congestion of the *annulus conjunctivæ*, or the *orbiculus ciliaris*. It may also depend on congestion of the *circulus iridis venosus*, when it will be seated on the portion of the sclerotica bordering the cornea, and be of a blue instead of a red colour.

Inflammation of the eyelids, and some degree of catarrh, are very common attendants upon iritis.

Throughout the disease there is aversion from light, indicated by the closure of the eyelids, and the involuntary rolling up of the cornea, whenever the eyes are momentarily opened. Pain is experienced in the affected eye to a greater or less extent—it is often very severe, and continues uninterruptedly for many days; in many cases it is much less severe. It is always most intense during the night. It is sometimes seated in the neighbourhood of the eyebrows, at other times in the cheek, deep as it were in the bone. M. Von Ammon has never met with a case of iritis unattended with pain, excepting in very apathic patients, or when the disease is of a decidedly chronic character.

In the commencement of the attack, the vision of the affected eye is more or less diminished, and may, in the progress of the disease, be entirely destroyed. In many cases, the patient sees objects as through a veil. In the few cases in which the inflammation extends from the iris to the deeper seated structure of the eye, dark specks appear to float before the eye, and other ocular spectra occur.

Such is a very general outline of M. Von Ammon's account of the more important local symptoms of iritis. In conjunction with these, there may also occur fever, pain of the head, loss of appetite, restlessness, a full, hard pulse, nausea, vomiting and constipation. All of these symptoms may be present in the same case—or some may be wanting—this will depend, in a great measure, upon the constitution of the patient, and the cause and grade of the iritis.

M. Von Ammon has entered very fully into an examination of the various results of iritis—more so than the generality of those who have treated of the disease.

Atrophy of the globe of the eye—varying in extent—is a very common consequence of iritic inflammation. Where the inflammation has given rise to an effusion of pus within the cavity of the eye, rupture of the cornea may occur, allowing the escape of the humours and collapse of the coats. This is the common mode in which complete atrophy of the eye is produced. In other cases, without rupture of the cornea, the bulk of the eye becomes diminished, the cornea of an oblong or triangular shape, and drawn on one side. A white ring is, in these cases, often observed surrounding the cornea at its juncture with the sclerotica.

A lesser diminution in the bulk of the eye is very common—it is rendered evident, when both eyes are closed, to the hand placed over the atrophied and the sound eye.

In other cases, a yellow colour, and greater density of the sclerotica are produced, while the vessels of it and of the conjunctiva are injected and often varicose. An oblong shape of the iris and cornea may result from atrophy of the ciliary circle. In other cases, there result a lighter colour and macerated appearance of the iris, and often an increased folding of its free edge. The iris may also become changed in its position. The form and motility of the pupil may be altered, and the powers of vision rendered defective. Deceptive vision is a very common result of iritis, as is, also, more or less strabismus, especially when the iritis affects both eyes, and when in one the pupil is rendered permanently smaller, or adhesions of the iris have been formed.

Atrophy and thinning of some portion of the iris are occasional consequences of iritic inflammation. These, M. Von Ammon has observed to occur most frequently in blue eyes. In such cases, the motions of the iris are impeded or destroyed—its colour is rendered paler—the pupil is diminished in size, and its rim is marked by irregularities. The black pigment is either diminished in quantity or entirely wanting—so that the pupil has an ash-gray colour. The iris is, in some cases, partially destroyed, or a perforation occurs at its central or ciliary ring. Subsequent to chronic iritis, the iris is, in some instances, observed to have an abnormal motion—floating, in the different motions of the eye, backwards and forwards, between the cornea and lens. M. Von Ammon has, in conjunction with this condition of the iris, observed, in some cases, more or less dulness or opacity of the capsule of the lens, and an abnormal motility of the lens, (*cataracta natalitis.*) The lens may become completely opaque when the inflammation extends from the iris to its capsule.

A number of other results of iritis are noticed by our author, but of unfrequent occurrence and of far less importance to those which we have merely indicated, but which, in the work before us, are examined and described with great minuteness and care.

In regard to the treatment of iritis, M. Von Ammon, after pointing out the great importance of active remedies at the very commencement of the attack, and the difficulty, even by the best-timed and most judicious course of treatment, of preventing some degree of deformity to the eye, and more or less injury to vision, remarks, that the chief remedy to be relied upon for the removal of the disease is *blood-letting*.

Upon the first day of the attack, he directs the patient, whether he be young or old, to be bled until the pain of the eye is removed; and if the pain recurs on the ensuing day, the bleeding to be repeated—and even again, until the inflammation is entirely subdued. In slight cases, the application of leeches to the mastoid process,—the flow of blood from their bites being kept up for several hours—M. Von Ammon believes will often be sufficient to remove the disease. The application of leeches to the external angle of the eye has appeared to him to be attended with injurious consequences.

After bleeding the bowels should be opened freely by the use of saline purgatives, which he prefers, in the general run of cases, to calomel and jalap, and the more drastic articles that have been recommended by some physicians.

"The patient should, at the same time, be put on a restricted diet, be kept perfectly quiet, and his eyes should be defended from the light. The affected eye should not, however, be closely bandaged, especially if there is a discharge of an acrid fluid from it." The best plan, according to M. Von Ammon, is to suspend from the forehead over the eye a fold of linen. The sound eye should, also, be excluded from the light lest its use and movements excite irritation in the other. The eyelids he directs to be wet frequently with tepid water or milk, which he considers preferable to cold lotions.

"The diminution of the pain and aversion from light are the indications of the reduction of the inflammation,—but if, upon exposure of the eyes to the light, these symptoms are found to return in any degree, the depletory remedies are to

be at once recommenced with—or we endanger the integrity of the eye by allowing effusion to occur."

"If the attack is of an obstinate character, or occurs in lymphatic or cachectic constitutions, some derivative may be applied between the shoulders, upon the back of the neck, or upon the arm. Those generally recommended are blisters, the mezereon bark, the tartar emetic ointment or a cautery; some are in favour even of setons."

"I have repeatedly," remarks M. Von Ammon, "resorted to all of these remedies, and found that such derivatives prove often in iritis, as, in fact, in many, perhaps in all, of the inflammatory affections of the eye, of little or no advantage in arresting the progress of the disease." "They may, indeed," he adds, "be even productive of injury by producing a degree of febrile excitement, and in this manner augmenting the inflammation of the iris." He has observed this to take place repeatedly in scrofulous subjects.

Warm pediluvia the author considers to have a beneficial effect. But he is not in favour of general bathing in the ordinary forms of the disease—he has nevertheless occasionally seen good effects result from its use.

While he objects to most of the local applications usually recommended in cases of iritis, he admits that the external application of belladonna is often very beneficial in causing a dilatation of the pupil and thus shielding the iris from adhesions. Frictions, also, with opium or morphium, either alone or combined with calomel, he has found to allay the severe pain of the eye which generally occurs towards evening,—he has seen good effects, likewise, result from the application to the eye of narcotic herbs enclosed in a bag; and he recommends, in cases of traumatic iritis, the application to the diseased organ of linen cloths wet with cold water in which has been dissolved a portion of the extract of belladonna.—℞. Ext. belladonnæ, ℈j. Solve in aq. destillat. ℥xviii. This solution is to be kept for use in a vessel placed in a basin of cold water or in ice.

When we have failed in arresting the disease before effusion has taken place, our treatment must be changed. The patient should be put upon a more nourishing diet and such remedies resorted to as have the effect of causing absorption of the effused fluids--or of diminishing the extent of disorganization liable to be produced by them.

To fulfil these important indications a great variety of internal remedies have been proposed, the principal of which are cicuta, arnica, senega, colchicum, sarsaparilla, tartar emetic, the golden sulphuret of antimony, muriate of barytes, calomel and corrosive sublimate, red precipitate, hydriodate of potass or soda, carbonate of potass or soda, turpentine and the cod's liver oil.

These remedies are described—the one or other being employed according to the nature of the effusion, the character of the iritis, and the constitution of the patient—as being calculated to remove the remaining symptoms of inflammation, to produce an absorption of the effused matters, and to remove that particular dyscrasis which was, in some degree, the remote cause of the iritis.

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As iritis is very liable to relapse, great care should be observed during the period of convalescence, to avoid every thing liable to renew the disease.

We have thus presented a brief but accurate outline of the observations of M. Von Ammon, in relation to the pathology and treatment of iritis in general, and would be pleased to notice the subject of the four remaining books, which treat of the several forms of iritis, their causes, symptoms and respective remedies,

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but the space to which we have already extended this notice, and the number of recent publications which demand our attention, oblige us to conclude here the present article. Such of our readers as feel an interest in the affections of the eye, and are conversant with the German language, will be much gratified and instructed by a careful study of the whole work. We regret that M. Von Ammon has not thought proper to accompany the present publication with plates illustrative of the various forms and stages of the disease of which he treats; the references in the volume before us are to the plates accompanying the Leipzig edition of the original prize essay in Latin. D. F. C.

ART. XV.—*Darstellung der Verfassung und Einrichtung der Baumwoll—Spinnerei—Fabriken in Nieder—Oesterreich: Mit besonderer Beziehung auf die Moralisch—Intellectuelle und Physische Erziehung der daselbst verwendeten Kinder und die diessfalls bestehenden gesetzlichen Vorschriften.* Von Dr. Jos. Joh. KNOLZ, k. k. nied. österr. Regierungsrathe, Sanitäts—Referentem und Landes—Protomedicus. Wien. 1843. 8vo. pp. 96.

An Exposition of the Condition and Management of the Cotton Factories of Lower Austria, with particular reference to the Moral, Intellectual and Physical condition of the Children employed in them, with the existing legal provisions on this subject. By J. J. KNOLZ, M. D. Vienna, 1843.

THE influence exerted upon the health and well-being of children by the labour performed by them in cotton factories becomes an important question of public hygiene, in consequence of the vast numbers who are now employed in these establishments.

The subject has for many years attracted considerable attention in Europe, but the statements that have been heretofore made in respect to it are marked by so great a degree of discrepancy as to render it difficult to arrive at any thing like a correct conclusion.

Recently, however, the question has been more closely investigated, particularly in relation to the cotton factories of Europe, by individuals who, to all appearance, are uninfluenced by prejudice or by a misdirected philanthropy. The results of their investigations, so far as they have been made public, show that there results no injury to the health of the children who labour in establishments for the spinning and weaving of cotton goods, in consequence of their confinement or the nature of their occupations, nor any impediment to their full physical development. On the contrary, it would appear from the facts that have been adduced, that the health and bodily development of the children in cotton factories, may, by a due attention to cleanliness, ventilation and other sanatary measures, be even more effectually secured than of children of the labouring classes who are otherwise employed, and that by proper regulations, which are easily carried into execution, their mental and moral powers may be as effectually cultivated.

In the work before us, Dr. Knolz, who holds a responsible public station, has examined, with great care, the condition of the children employed in the cotton factories of *Lower Austria*, and the facts which he has adduced are in the highest degree interesting.

There are, in Lower Austria, thirty-seven extensive cotton factories, which have in constant operation 345,751 spindles, and give employment to 10,000 men, women and children; of whom about 2,500 are between 12 and 18 years of age. Recently, no children under twelve years of age are admitted, with a few exceptions, of children under that age, who are received from compassion in consequence of their completely destitute condition, and a limited number, say perhaps about 5 per centum of the whole number of children employed, who are permitted to work under the inspection of their parents. The age at, and the circumstances under which children may be received are regulated by law.

The larger portion of the young persons employed in these factories come into

the factory every week on Sunday evening, bringing with them their provisions for the week, which consist usually of lard, meal, bacon, bread and beans, &c. A portion of these provisions is cooked daily, for common use, by one of the females, the fuel being supplied by the owner of the factory. These young labourers lodge in separate beds, and the sexes in different apartments, within the factory. They receive their wages on Saturday afternoon and depart at four o'clock for the dwellings of their parents or relatives, with whom they spend the Sunday and all religious holidays. In winter, however, they, for the most part, remain altogether in the factory, their food being brought to them by one of their parents or relatives. Others of the children, whose parents or friends reside in the immediate vicinity of the establishment where they work, eat their meals and lodge at home; while others again are supplied with food by persons near to the factory, who derive from this their support, but who are subject to strict regulations calculated to ensure, at a moderate price, to those employed in the factory, a wholesome, nourishing diet, at a fair price.

The rooms in which the children labour are invariably lofty, well lighted, and, as far as the kind of work carried on in them will permit, kept perfectly clean. They are carefully ventilated in summer, and well and equably heated during the winter; in many establishments by steam distributed in iron tubes. Great attention—under judicious regulations, strictly enforced—is paid to the personal cleanliness of the children themselves.

They are occupied, daily, between twelve and thirteen hours, an hour and a half being allowed at noon for dinner and recreation. Three quarters of an hour of their working hours are generally unemployed every day during the putting of the machinery into full operation in the morning, and the arresting of its operation in the evening.

The labour demanded of the children requires altogether but little bodily exertion, excepting a frequent change of position, by which they are better protected from injury from accidental changes of temperature than the apprentices to many other trades. It is made by law the interest of the employer to save the children who labour in factories from any undue fatigue by which their strength and activity may be impaired.

The discipline to which they are subjected is, according to our author, mild and parental. In a large number of instances their immediate overseer is one of their parents or a near relation. The character of the people of Lower Austria is represented by Dr. Knolz as mild and affectionate—so that any thing like a severe or barbarous treatment of children, even by those who are no way related to them, is unknown among them.

The author speaks in the most decided terms of the good health and full physical development of the children who are employed in the cotton factories of Lower Austria. In fact, the legal regulations in respect to these factories would appear to be well calculated to ensure both.

Their good condition of health, Dr. Knolz remarks, must strike every beholder who observes their joyful movements and cheerful deportment as they depart, after their days' labour, from the factories.

The largest factory in this part of Europe, he adds, has been in constant operation now for nearly thirty-six years, during which period it has employed 21,600 children, all of whom left it, after their four years' service, in perfect health, and well grown for their years.

Among those employed in the factories there has never been observed a greater mortality than what occurs among the inhabitants in general of the neighbourhood in which they are located. In fact, the labourer in the factory is entirely exempt from many of the causes of disease—as heat and cold, sprains and contusions—to which the agricultural labourer is exposed; and hence it is a common observation that the children of the latter are more liable to maladies from these causes than those employed in the cotton works. During the epidemic cholera of 1832, of the twelve hundred persons employed in the extensive factory of Pottendorfer, but three fell victims to the disease.

There is no endemic disease, Dr. Knolz declares, from a long-continued series

of observations upon this subject, to which the factory hands are subject. Even when disease does attack the children employed in the factories, it is far less the result of any thing connected with the latter than of injury received in their sports during the periods of recreation. The generality of these diseases are of a gastric character, or are the result of cold.

Children employed in the factories die occasionally of scrofulous affections and consumption, the germ of which diseases they bring with them, which is shown by their parents being affected with the same—or they are the result of the neglect and misery to which, in their earlier years, they have been subjected.

An experience of many years has shown, remarks our author, that the warm atmosphere of the cotton factories, loaded with oily particles, is particularly advantageous to persons labouring under affections of the lungs; so that children and old persons so circumstanced, have withstood, in the factories, for a long time, the ravages of their complaint, and always feel most comfortable whilst in the work-room.

Children under twelve years of age, employed in the factories, attend, either in the schools attached to them, or in those of the village, during a certain number of hours daily, while those over twelve years receive, in the Sunday schools established in each institution, the necessary elementary instruction. Many factories employ a particular instructor, while others pay to one of the schoolmasters of the neighbourhood a certain sum, for which he devotes particular hours daily for the instruction of the children attached to them.

The children receive, on Sundays, and all church holidays, careful religious and moral instruction, either at the churches of the neighbourhood or by persons appointed for this especial purpose.

In an appendix, Dr. Knolz has presented an abstract of the various legal provisions to secure the religious, moral, intellectual and physical well-being of the children employed in the Austrian factories. They bear throughout the marks of wisdom and justice, and cannot fail, if carried strictly into effect—and we are assured that such is the case—of attaining the important ends for which they were enacted. D. F. C.

ART. XVI.—*Untersuchungen über Periodische Vorgänge im gesunden und kranken Organismus des Menchen.* Von GEORG SCHWEIG. Karlsruhe, 1843. 8vo. pp. 168.

An Inquiry into the Periodical Movement of the Human Organism in Health and Disease. By GEORGE SCHWEIG.

THE object of the present publication is to show, that while the activity of the various organic functions of the human body varies considerably at different periods, it is very nearly the same at corresponding periods. In other words, that the organic actions observe, in their augmentation and decrease, a strictly periodical movement, and that a similar periodicity is manifested by all the organic phenomena in health and disease. The author has further attempted to discover the laws by which this periodicity is governed.

The work is divided into eight parts—the *first* of which is introductory. The *second* treats of the periodical movement of the secretion of the urinary acids. The *third* of the influence of the periodical movement upon the fatal termination of diseases. The *fourth* of the influence of the periodical movement upon menstruation. The *fifth* of the influence of the periodical movement upon the paroxysms of an epileptic; the *sixth* of the action of the *trophical period*, (the phases of the moon,) in disease. The *seventh* of the construction of the trophical period, and the *eighth* and last part contains some general considerations on the action of the periodical causes.

The inquiry undertaken by M. Schweig is one of great interest, and he has treated it with considerable ability. The large number of observations he has collected in proof as well of his general proposition as of the several minor questions involved in it, cannot fail to attract to the subject the attention of physicians.

The periodicity of nearly all the phenomena of life, during a state of health, is admitted by many of the most distinguished physiologists of the present day, and that the phenomena of disease observe a similar periodicity, is rendered probable by too many well-authenticated facts, to permit of the question being discarded without a full and cautious investigation.

The peculiar character of the subjects discussed by our author, as well as his method of treating them, will prevent us from entering into an examination of the work before us, or of attempting to lay before our readers even an analysis of its contents. To do either would demand more space than we can well spare—and any partial exposition of the statements and views of M. Schweig would do injustice to him, while it would convey but little useful information to our readers. To understand fully the bearing of the facts adduced by the author and the value of the deductions he has drawn from them, the work must be carefully studied throughout.

The laws laid down by M. Schweig as those by which the periodicity of the phenomena of health and disease is governed, are extremely plausible, but their full establishment will demand further and more extended and cautious observations.

We present the following tables from that portion of the work which treats of the influence of the periodical movement upon the mortality of diseases.

The first shows the number of deaths according to the hours of the day.

From 12 o'clock at night to 12 at noon.		From 12 o'clock at noon to 12 at night.	
12 to 1	119	12 to 1	201
1 to 2	152	1 to 2	178
2 to 3	188	2 to 3	208
3 to 4	202	3 to 4	205
4 to 5	215	4 to 5	214
5 to 6	228	5 to 6	233
6 to 7	215	6 to 7	213
7 to 8	215	7 to 8	159
8 to 9	230	8 to 9	191
9 to 10	221	9 to 10	221
10 to 11	202	10 to 11	202
11 to 12	181	11 to 12	285

To show the hours at which the greatest and least number of deaths occur, the table may be arranged thus:

11 to 12 P. M. 285	7 to 8 A. M. 215	12 to 1 P. M. 201
5 to 6 P. M. 233	4 to 5 P. M. 214	8 to 9 P. M. 191
8 to 9 A. M. 230	6 to 7 P. M. 213	2 to 3 A. M. 188
5 to 6 A. M. 228	2 to 3 P. M. 208	11 to 12 A. M. 181
9 to 10 A. M. 221	3 to 4 P. M. 205	1 to 2 P. M. 178
9 to 10 P. M. 221	3 to 4 A. M. 202	7 to 8 P. M. 159
4 to 5 A. M. 215	10 to 11 A. M. 202	1 to 2 A. M. 152
6 to 7 A. M. 215	10 to 11 P. M. 202	12 to 1 A. M. 119

The following table shows the difference in the number of deaths during the morning and evening hours, in winter and summer.

MORNING.

	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9
Winter,	95	109	116	115	113
Summer,	120	119	99	100	117
	215	228	215	215	230

EVENING.

	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10
Winter,	103	114	81	77	105	111
Summer,	111	119	132	82	86	110
	214	233	213	159	191	221

Table of deaths from Consumption at different hours of the day.

NIGHT.					MORNING.						NOON.
12–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12
21	27	34	32	43	30	44	29	52	37	30	26
NOON.					EVENING.						NIGHT.
12–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12
42	31	29	27	30	36	32	20	22	31	33	42

Table of Deaths during a Synodical Period.

During the first period, in which the new moon occurs, 898 deaths took place.
" second period, " " 953 "
" third period, in which the full moon occurs, 1005 "
" fourth period, " " 948 "
" fifth period, " " 871 "

Table showing the influence of the anomalous course of the Moon.

Between the Apogee and Perigee of the moon 2328 deaths occurred in 2008 days.
" Perigee and Apogee, " 2347 " 2009 "

Preceding the Apogee.

5th day.	4th day.	3d day.	2d day.	1st day.	
171	162	165	161	166	825 deaths.
On the day of the Apogee,					169 "

Succeeding the Apogee.

1st day.	2d day.	3d day.	4th day.	5th day.	6th day.	
137	174	164	176	154	166	971 "
					Total	1965

Preceding the Perigee.

5th day.	4th day.	3d day.	2d day.	1st day.	
159	198	178	168	167	870 "
On the day of the Perigee,					197 "

Succeeding the Perigee.

1st day.	2d day.	3d day.	4th day.	5th day.	6th day.	
150	185	197	170	147	169	1018 "
					Total	2085 "

D. F. C.

ART. XVII.—*General Report of the Royal Hospitals of Bridewell and Bethlem, and of the House of Occupations, for the year ending* 31 *December*, 1843. London, pp. 82, 8vo.

WE have read this report with much interest, and shall present a view of some of its most prominent points, together with the ideas which were suggested by the perusal of them.

The Bethlem Hospital is an old institution; so old, indeed, as to have originated, in the corruption of its name, the somewhat expressive word "Bedlam," which, after long use, has, with its derivative "Bedlamite," been placed in our lexicographies, and thus incorporated into the English language.

Manual Labour.—It appears that, although for years, much incidental work has been performed by the inmates of Bethlem, yet no systematic course of labour was established until recently. Eleven workshops have been erected during the past year, in which "it is intended to carry on simple handicraft trades." We are surprised that, in a country like England, this should not have been done before. The example was set by other institutions. At Wakefield and at Hanwell the series of workshops for weavers, tailors, shoemakers, cabinetmakers, &c., have no slight resemblance to a Turkish bazaar, with all the clerks and customers converted into artizans. At the latter asylum, particularly, the population is almost a self-supporting and self-supplying community. We have nothing in America that equals or even nearly approximates it in this respect, and so far, at least, some of the British asylums are superior to ours. The comparatively transient residence of a great proportion of the patients at Bethlem is given as one reason for the delay in the introduction of regular employment. In England, also, as well as in this country, there has been a popular prejudice against the products of labour in public institutions, a prejudice unfounded, excepting in the rivalry of the artizans beyond the pale of such establishments. Sir William Ellis informed us that this was the greatest obstacle to the establishment of systematic mechanical labour at Hanwell, and was only overcome by long perseverance and unyielding firmness of purpose.

The inmates of Bethlem have reason to rejoice at the construction of the "eleven shops," and we doubt not that ere this, as is anticipated by the report, "an industrious and cheerful colony of artizans fill these buildings, instead of pacing the galleries in listless idleness and melancholy silence."

In the female department the variety of employment has also been recently increased, by the introduction of straw-platting, bonnet-making, lace-making and fancy-work, and this with the best effect on the patients. Although, as a general rule, the female patients in American asylums are more extensively employed than the males, from the greater facility of supplying them with suitable work, yet the example at Bethlem may furnish a useful hint to the officers of our institutions.

Amusements.—To the previous resources for amusement—the games of chess, draughts, cards and backgammon—there have been recently added a bagatelle-board, facilities for writing and drawing, a piano forte and a library. "On the evening of the last Saturday in the year, (1843,) nearly thirty of the female patients were assembled to celebrate the festive period. Quadrilles were played and danced by some, while others were engaged at a round game at cards." Besides this, they were treated with such a supply of fruit, cakes and other refreshments, that we are almost induced to believe that some of the authorities of Bethlem had been reading Dickens's "Christmas Carol," although it does not appear that there was any "Scrouge" to order the turkeys.

"On both sides of the hospital," says the report, "the introduction of employment and amusements has effected a marked change in the habits of the patients and the appearance of the galleries."

Two special cases are related in which their advantage was strikingly effective in the improvement of the individuals.

In the asylums of our country, pianofortes and bagatelle-boards and libraries have long ceased to be novelties; and parties, with their appropriate refreshments, have for years been events, not of annual, but of weekly occurrence. In the resources for recreation and amusement, the American asylums, as a whole, are in advance of those of Great Britain, as the latter have precedence of the former in the department of manual labour.

Restraint.—It appears to have been but a short time since the patients at Bethlem "were first released from those fetters which were the ordinary means of restraint," inasmuch as this important improvement was effected by their "*late* esteemed matron." During the last five years there has been a diminution of the numbers under restraint, the weekly average having been, in 1839, $11\frac{333}{523}$, while, in 1843, it was but $3\frac{1}{52}$.

The abolition of mechanical restraint upon the persons of the insane is a hobby that has been somewhat hardly ridden during the last few years; and we are not sufficiently positive that some, in their enthusiasm to mount it, have not, like the sailor in the song, found themselves "more than on," and "over 'tother side." It is not our intention, in this place, to enter into a discussion of the merits of the question, but we most fully believe it to be the duty of those concerned in the care of lunatics to treat them, in every respect, so far as is practicable and tends to their true interests, as if they were in mental health. If we properly understand the subject, that condition of "entire abolition of bodily restraint," advocated by some of our British friends, is one which has long existed in some of the American institutions. The British reformers, in regard to this question, have *left off* where many of the Americans *began*, and we confidently believe that, in those English asylums in which the anti-coercive measures have been carried to their greatest extent, the amount of restraint is no less, in proportion to the number of the patients, and with proper allowances for their condition and form of disease, than it has been in some of the American institutions from the time they first went into operation.

"The experience of the last year," says the report, "adds another confirmation to the now generally-received opinion, that mechanical restraint is an exciting cause for suicidal propensities." Eighty-one suicidal patients were admitted, of whom thirty-seven had attempted self-destruction previous to admission; yet no effort of the kind was made in the hospital during the year. "During the twenty years, from 1750 to 1770, when every patient was under restraint, the suicides were in the proportion of 1 to 202, whereas, during the last twenty years, the proportion has been only 1 in 963."

Baths, diet, general treatment, &c.—Previously to the last year, bathing was practised only when "specially directed by the physician, or when required for the purposes of cleanliness;" now, every patient has a tepid bath weekly, unless prohibited by the physicians. Capacious cold baths, as well as shower baths, have also been added for summer use. The patients change their linen twice every week instead of once as formerly was the custom. They have also recently, and for the first time, been supplied with tea and sugar, and this at an expense of nearly four hundred pounds sterling per annum. "*Knives and forks, properly secured, have been ordered to be substituted for the bone implements hitherto used, in those wards occupied by patients in a convalescent state; crockery has also been provided in lieu of the wooden platters and bowls formerly in use.* Within the last five years the numbers attending chapel have doubled, and within the last ten years have more than trebled. The number of nurses has been increased, this year, from eleven to sixteen, and that of attendants from twenty-one to twenty-five."

The foregoing items furnish data for the comparison of Bethlem *as it is* with the same *as it has been*, as well as with institutions of a similar description in America. In such of the latter asylums as we are acquainted with, the weekly bathing has been in practice we know not how long, but ever since we first knew any thing upon the subject. The custom of changing linen twice in each week is also followed in some, and we believe in most of the American asylums; and we have not the "shadow of a doubt" that, in every asylum of this country, not

only tea but coffee also has been a regular item in the regimen since it first went into operation, provided that period were not anterior to the year 1800. These luxurious beverages, owing to the exorbitant rates of duty in Great Britain, cost from one to two hundred per cent. more in that country than in this, and consequently are much less frequently seen in public institutions.

We have italicised one of the above extracts because it will excite astonishment in the American reader.

In most of the lunatic asylums, on this side the Atlantic, from three-fourths to nine-tenths of the patients, whether convalescent or not, eat with knives and forks, and that, too, without any "proper security," other than is afforded by the hands of the patients themselves; and others, whose condition does not permit this indulgence, are supplied with spoons. A "bone implement" would be a curiosity amongst us, and wooden platters have not been used, we believe, during the last twenty years in any of the public institutions of this country.

Hitherto it has been customary for the physician of the Bethlem Hospital to visit the patients, under ordinary circumstances, but twice a week. This attendance is now daily—a most important and necessary improvement.

The medical department of an asylum for the insane cannot, in our estimation, and for reasons obvious to those acquainted with the treatment of lunatics, be faithfully and well conducted if the physician do not visit his patients at least diurnally.

In the adoption of a measure of great importance to the interests of the community, as well as of the members of the medical profession, the governors of the Bethlem Hospital have preceded those of all American institutions for the insane. "Impressed with the value of increasing the knowledge of this calamitous disorder, (insanity,) a committee of governors have conferred with the physicians as to the expediency of extending the admission of pupils, and the result is a recommendation that each physician should be at liberty to receive any number of pupils, but that no more than four should accompany him when he makes his visits to the patients. And the court has ordered that every facility should be afforded for giving the pupils the advantages of lectures or pathological demonstrations." The autopsic examinations, of which there were twenty during the last year, continue to be made by Mr. Lawrence. To this source we confidently look for one of the most valuable contributions to the pathology of insanity. Appended to the report is a series of twenty-four statistical tables, in which the results of the medical department of Bethlem are recorded with elaborate minuteness and apparent accuracy. But a small portion of these details would be, if isolated, of any interest or value. The most important are recorded below.

Curable patients admitted in 100 years, ending Dec., 31, 1843,	17,803
Discharged cured,	7,108
Died,	1,799
Admitted in ten years, ending 31 Dec., 1843,	2,758
Cured,	1,487
Died,	162
Admitted in 1843,	284
Cured,	159
Died,	19

Of those admitted in 1843, there were single 121; married, 142; widowers, 3; widows, 16.

The origin of the disease was attributed to

	Men.	Women.	Total.
Moral causes in . .	53	77	130
Physical causes in . .	29	29	58
Hereditary causes alone	8	19	27
Not ascertained . .	19	50	69

P. E.

ART. XVIII.—*A System of Human Anatomy, General and Special.* By ERASMUS WILSON, M. D., Lecturer on Anatomy, London. Second American edition. Edited by Paul B. Goddard, A. M., M. D., Lecturer on Anatomy, and Demonstrator, in the University of Pennsylvania, &c. &c. &c. With over two hundred illustrations by Gilbert. From the second London edition. Philadelphia. Lea & Blanchard, 1844.

THE present edition of this valuable work is enriched by a chapter on Histology by the Editor, and a considerable number of new cuts, among which last are included some very beautiful representations of the nerves.

The remarkable conciseness and perfect clearness of the descriptions, and the numerous and beautiful illustrations, render this work beyond all question the most complete and convenient manual for the student of anatomy that we possess.

ART. XIX.—*Anatomical Atlas, illustrative of the Structure of the Human Body.* By HENRY H. SMITH, M. D., Fellow of the College of Physicians, Member of the Phila. Med. Soc., &c. Under the supervision of WM. E. HORNER, M. D., Prof. of Anatomy in the University of Penn., &c. Lea & Blanchard, 1844. Parts III., IV. and V.

THE first and second parts of this valuable atlas, the former containing the bones and ligaments, and the latter the dermoid and muscular systems, have been already noticed, (No. for January, 1844, p. 174, and No. for April, 1844, p. 433,) and we have now before us the third, fourth and fifth parts, which complete the work. The third part embraces the organs of digestion and generation; the fourth, the organs of respiration and circulation, and the fifth and last part, the nervous system and the senses.

This atlas contains six hundred and thirty-six figures, which are appropriated to the different systems, as follows:—for the illustration of the bones and ligaments, 130 figures; dermoid and muscular systems, 91 figures; organs of digestion and generation, 191 figures; organs of respiration and circulation, 98 figures; and the nervous system and the senses, 126 figures.

These figures are well selected, and present a complete and accurate representation of that wonderful fabric, the human body. The plan of this atlas, which renders it so peculiarly convenient for the student, and its superb artistical execution have been already pointed out. We observe, in our copy of the numbers just published, a few typographical errors, which we learn, however, exist only in the early impressions, they having been since corrected. These errors relate principally to the size of the figures, and are not calculated to mislead, as they are so palpable as to be manifest to the merest tyro. Thus, fig. 442 is said to be but the size of life, instead of *one-third* the size of life, as every one will at once perceive.

We must congratulate the student upon the completion of this atlas, as it is the most convenient work of the kind that has yet appeared; and we must add, the very beautiful manner in which it is "got up" is so creditable to the country as to be flattering to our national pride.

ART. XX.—*A Dictionary of Practical Medicine, comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, &c.* By JAMES COPLAND, M. D., F. R. S., edited by CHARLES A. LEE, M. D. New York: Henry G. Langley, 1844. Part I: pp. 144.

THE design of this dictionary is to present, "in an abstract and condensed form, the opinions and practice of the most experienced writers, British and Foreign, so digested and wrought up with the results of the author's practice, that the student and young practitioner will not be bewildered in the diversity of the opinions and facts, adduced for their instruction, but be guided in the difficult path on which they have entered, and enabled with a due exercise of their powers of observation and discrimination, to arrive at just conclusions and successful practical results." And further, to furnish the experienced practitioner with a diversified range of opinions, methods of cure, and authorities, which his matured judgment will enable him to apply in an appropriate manner to particular cases.

This design the author has thus far executed in so masterly a manner as to have obtained general commendation, and to have excited universal regret that the work should have so long lingered in the press, being even still incomplete; and no confidence can be felt that it will be completed within any moderate period, the author having constantly failed to fulfil his promises as to its future progress. The first part was published in London, in 1832, and the assurance was given in the prospectus, that the whole work would be completed in the course of a few months. The second part did not appear, however, until the following year. The third part was then promised "early in 1834," but it was not given until the following year. The fourth part was at the same time announced to be in the press, and to be shortly published, yet it did not appear until two years subsequently, (1837.) In a notice on the cover of this last part, the author expresses his regret that numerous unforeseen circumstances have delayed the appearance of that part of the work, and states that the materials for the remaining parts "are in such a state of forwardness as to induce" him "to promise the fifth part in December next, [1837] and the concluding part in a few months after that." That part was not published, nevertheless, until the following year, and on the cover we find the following notice. "The author assures the subscribers that the materials for the remainder of the work are in such a state of forwardness as to enable him henceforward to bring out a half part every three months until the whole is completed. As most of the important subjects have been already treated of, the work will not extend beyond the volume to which this part belongs." How have these assurances been complied with? Up to the present moment, a period of *six years*, four more parts only have been published, and the ninth part, the last that has appeared, instead of completing the work, only extends to the letter O, and we are told that it will require another volume to finish it. As twelve years have been occupied in preparing the two volumes which have appeared, the materials of the work being, as we have been repeatedly assured, all prepared, it may be hoped, if the author's life is spared, and if no unforeseen obstacles arise, that in six years more the work may be completed. When this most desirable consummation shall be arrived at, those who are living to benefit by it will possess a work which, for the extensive and laborious research which it displays, the ability with which the materials are digested and condensed; the deep reflection and excellent judgment conspicuously manifested, renders it an extraordinary monument of individual industry.

The American editor seems disposed to rival the author in industry, his additions to the part before us being very numerous, and adding greatly to its value, particularly by supplying the observations and experience of American physicians which have been overlooked in the original, and in enriching the bibliography with references to our own literature. We must urge him, however, to be more careful hereafter in correcting the press, so that his valuable additions

may not be injured by such typographical errors as "Pancoast" for Pennock, "Collava de Martigny," for Collard de Martigny, "Ægineta" for Paulus Ægineta, "Valinieris," for Valisnieri, &c.

We regret also to observe that Dr. Turnbull of London is quoted, as if he were some authority, for the use of "hydrocyanic acid as a remedy in incipient amaurosis, as well as in incipient cataract, opacity of the cornea, inflammation, iritis," &c.!

ART. XXI.—*Principles of Pathology and Practice of Medicine.* By JOHN MACKINTOSH, M. D., Lecturer on the Practice of Physic in Edinburgh, &c., &c., &c. Fourth American from the last London edition. With notes and additions, by SAMUEL GEORGE MORTON, M. D., formerly Physician to the Philadelphia Hospital, &c. &c. Philadelphia, Lindsay & Blakiston, 1844: pp. 892, 8vo.

THE first edition of this work appeared in 1829, and though it does not appear to have been received with cordiality by the leading medical journals of the day, probably owing to the vindictive disposition of the author, it has been popular with students, four editions having been printed of it in Scotland and the same number in this country. The spirit in which the author criticises the opinions of some of his cotemporaries is certainly very unamiable, and may lead to the suspicion that his judgment may have been sometimes biased by his animosities; still his work embodies a large amount of valuable information, and with the additions made to it by the American editor and his friends, it will no doubt continue to be received with favour. The present edition has the recommendation also of having been issued in a style exceedingly creditable to the taste and liberality of the publishers.

ART. XXII.—*A Complete Condensed Practical Treatise on Ophthalmic Medicine.* By EDWARD OCTAVUS HOCKEN, Physician to the St. Blenheim Infirmary, &c. &c. &c. Part I. London, Samuel Highly, 1844: pp. 103, 12mo.

OPHTHALMIC literature bids fair to be characterized as much hereafter by its copiousness, as it was until only a few years since by its poverty. Numerous, however, as have been the recent contributions to this department of medical science, Dr. Hocken's treatise will be considered a very useful acquisition. It is to be completed in three parts, of which the first only has appeared. This contains some interesting introductory remarks on the legitimate manner of conducting ophthalmological study, some general remarks on the method of examining the eye, and on the general principles of diagnosing diseases of the eye and their treatment, and a very condensed but satisfactory account of the several diseases of the conjunctiva. The arrangement and manner of treating these subjects are very good, and the author has succeeded in condensing, in a small space, a very large amount of useful information. If the remainder of the work is executed in an equally skilful manner, it will constitute one of the best manuals of ophthalmic medicine at present in our language.

ART. XXIII.—*The Medical Student, or Aid to the Study of Medicine; a revised and modified edition.* By ROBLEY DUNGLISON, M. D., Professor of the Institutes of Medicine, &c. &c. Philadelphia, Lea & Blanchard, 1844: pp. 311, 12mo.

So popular are the works of Dr. Dunglison with medical students, that we doubt not the present publication, a second edition, much modified from the first, will be eagerly sought for by those who propose to engage in medical pursuits. It is divided into four chapters, devoted severally to the consideration of the preliminary education of a medical student—a matter too often thought lightly of—of medical education prior to attendance upon lectures, during attendance upon lectures and after graduation. In effect, the author's aim is to teach the tyro what he ought to, and how he may study to the best advantage both before and after he has attained the dignity of a medical diploma; and while he gives him much good advice in an agreeable manner and enforced by happy illustrations, he endeavours to simplify his labours by presenting him with "a glossary of the prefixes, suffixes and radicals of many of the terms legitimately compounded," of medical technology, a vocabulary of terms used in prescribing and other useful information. C. R. K.

ART. XXIV.—*Traité des Phénomènes Electro-Physiologiques des Animaux.* Par C. MATTEUCEI. *Suivi d'études Anatomiques sur les système nerveux et sur l'organe électrique de la Torpille.* Par PAUL SAVI. Paris, Fortin, Mason et Cie, 1844: pp. 348, 8vo. Planches, 6.

To those who are interested in electro-physiological investigations this volume will be exceedingly useful. M. Matteucei's treatise contains a minute description of the instruments, and of the method of performing electro-physiological experiments, with observations on the therapeutic uses of electricity. It is illustrated with three large plates.

The concluding part of the volume, by M. Paul Savi, contains a very full and excellent description of the nervous system and electric organs of the torpedo, illustrated by three large and exquisitely executed plates.

ART. XXV.—*Methodus Medendi; or the Description and Treatment of the Principal Diseases incident to the Human Frame.* By HENRY MCCORMAC, M. D., Consulting Physician to the Belfast Hospital, and Professor of the Theory and Practice of Medicine in the Royal Belfast Institution. London, 1842: pp. 574, 8vo.

THIS volume is evidently the production of a deeply read medical scholar—one who has dived into the recesses of ancient professional lore, and is perfectly familiar with the medical literature of the day. It contains an immense mass of medical facts, which could only have been collected with great labour, and which are condensed with much skill; but the author has not always justly *appreciated* the facts and drawn sound conclusions from them. It cannot, therefore, be recommended to the student, for whom it would not be a safe guide; but the intelligent practitioner, who wishes materials for reflection, and facts from which to form his own judgment, will find this quite a treasury of knowledge.

ART. XXVI.—*A Manual of Chemistry; containing a condensed view of the present state of the Science, with copious references to more extensive treatises, original papers, &c., intended as a Text Book for Medical Schools, Colleges and Academies.* By LEWIS C. BECK, M. D., Professor of Chemistry in Rutger's College, New Jersey, and in the Albany Medical College. Fourth edition, revised and illustrated with numerous Wood Cuts. New York. W. E. Dean: pp. 12mo.

CONSIDERABLE advantage to the learned is afforded by the publication of *Compendiums* of a science which are not so full as to render their perusal tedious and laborious, and yet not so barely composed of facts as to become mere records or summaries. The facts of science can only be advantageously studied when accompanied with clear and succinct explanations, appealing to the understanding, and through it impressing the memory. Elaborate disquisitions may be fitted to the mental capacity of the proficient and philosophic student, but are far beyond the powers of the novice. In writing treatises for mere instruction in elementary principles this has been too often forgotten, and hence the few elementary publications that are really useful. The work before us is entitled a *Manual*, and is complete in its extent, and, as it appears to us, well calculated to fulfil the object intended by its compilation. Its reception, indeed, may be inferred from the edition, which, being the fourth, evinces the favour it has met with. The author has taken pains to give to the present issue of his work the merit of being brought completely up with the discoveries and improvements in chemistry, and has availed himself of the aids to its comprehension that more recently have been devised, among which may be looked upon as most important the use of *symbols*. As a text-book it must prove most valuable, and we heartily recommend it to the attention of such as are in attendance upon lectures, as well as to such as are desirous of reviving their knowledge, but yet are too much occupied to peruse more extended publications. J. C.

ART. XXVII.—*Medical Communications of the Massachusetts Medical Society.* Vol. VII. Part III. Second series. Vol. III. Part III. Boston, 1844.

THE contents of the publication before us are the annual discourse before the society, biographical notices of some of the members who have died during the preceding year, and the proceedings of the society and of the counsellors during the same period.

The theme of the annual address, which was delivered by Dr. John Homans, is the character and qualifications of the good physician; and he has treated it in a very able manner. He points out what the physician ought to be, morally and intellectually, in order to attain, if not to distinguished eminence and a wide-spread fame, at least to an honourable and an unsullied name, in his profession. We had marked several passages for extraction, but have room only for the following:—

"The physician must be a man of firmness, decision, self-reliance; able to meet emergencies, to think and act for himself as the case before him demands, and not as a servile imitation of the course of treatment described in a case somewhat similar would suggest. He must be superior to the inveterate prejudices of time-honoured theories and the seducing novelties of caprice and fashion, neither adhering to the one, and opposing the other, nor abandoning the one and adopting the other, with an obstinacy or a facility, alike to be condemned by a calm, clear, comprehensive judgment. He must not suppose all truth in the science of medicine to have been ascertained, nor accept with slight questioning every thing new as true, to be confided in and practised upon. With a mind open and active, with an observation extensive, accurate and discriminating, with the feelings that arise from association, habit and long-cherished opinion, under the control of the judgment, he must 'prove all things, and hold fast that which is good.'"

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Functions of the Lacteals and of the Veins.*—M. CHATIN's experiments were made for the purpose of ascertaining whether poisonous substances were introduced into the circulation by means of the veins, or by that of the lacteals.

1. Eight dogs were poisoned by introducing into their stomachs a large dose of arsenic, mixed with milk, and then tying the œsophagus. The blood of all these animals, both that extracted from the heart and from the large vessels, was incinerated with nitrate of potash. The product of the incineration furnished, by means of the apparatus of Marsh, a distinct ring, and spots of arsenic, which, on being subjected to the proper tests, furnished all the characters of that metal. The chyle collected from the thoracic duct of these eight dogs, added together, and treated in the same manner as the blood, yielded not the slightest trace of arsenic.

2. Like experiments were made on dogs by substituting tartar-emetic for the arsenic. The animals were killed about an hour after the administration of the poison by opening the carotid arteries. The antimony was found in the blood, but not even a trace in the chyle.

3. A quantity of blood abstracted from different individuals, who had been taking antimony in large doses, furnished a notable quantity of that metal.—*Ed. Med. & Surg. Journ.*, from *Comptes Rendus des Sc. de l'Acad. R. des Sc.*, &c., March 4, 1844.

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2. *On the Development of Animalculæ in the Alimentary Canal during Digestion.*—It appears, from the researches of MM. GRUBY and DELAFOND, that in a very great number of animals, the process of digestion is accompanied by the development of infusory animalculæ within the stomach and intestines. Four species were met with in the Ruminantia; seven in the horse; two in the dog; but only one in the hog. These animalculæ exist in such numbers that in the sheep it was reckoned that not less than from 18 to 30 ounces in weight of them were present,—a quantity very nearly equal to a fifth part of the fluid in which they swim. These infusoria are seen alive in prodigious quantity in the first and second stomachs of the Ruminantia; but in the third and fourth stomachs of these animals their carapaces or crustaceous envelopes are alone seen. In the horse, however, they are found alive throughout the whole length of the intestinal tube, excepting in the narrowed part of the colon and the rectum. From these facts MM. Gruby and Delafond conclude, that these animalculæ are digested in the fourth stomach (caillette) of the Ruminantia, and in the colon of the horse, and that both of these organs thus furnish a nutritive animal juice. They also infer that a fifth part of the vegetable matters introduced into the stomach of the herbivorous animals is destined to produce infusoria, which, digested in their turn, furnish animal matters to the general nutritive materials, and that this conclusion appears to receive a strong degree of probability from

the circumstance, that in carnivorous or omnivorous animals, as the dog and pig, the infusoria are not only much less numerous and smaller in size, but consist of only one or two species.—*Ibid.* from *Ibid.*, December 11, 1843.

3. *Influence of the Eighth Pair of Nerves on the Chemical Phenomena of Digestion.*—A paper was read May 27th on this subject, to the Academy of Sciences, by M. Bernard, who proposed, in a series of experiments, to inquire, in a more precise manner than has hitherto been done, into the part which we ought to attribute to the influence of the pneumogastric nerves in the act of chymification. It is well known that authors are not agreed as to the precise property which these nerves enjoy in the digestive process, and that many points of this question are a matter of controversy. The different and frequently contradictory results arrived at depending on the difficulties of observation, M. Bernard was of opinion that if the functions of the stomach could be performed under our own eyes, the study of these phenomena would be facilitated, and that it would be possible to appreciate the series of chemical changes which take place in this organ before and after division of the eighth pair of nerves.

M. Bernard made a fistulous opening in the stomach of a dog, so as to observe what passed in this viscus during digestion. The animal was submitted alternately to two kinds of nourishment; first, to raw flesh; secondly, to a kind of soup composed of bread, milk, and sugar cane.

At the moment these aliments were injected, the mucous membrane of the stomach became red, turgid and erectile, exhaling from its surface an acid and transparent fluid, the gastric juice which moistened the food. The raw flesh at the end of two or three hours was reduced to a chymous paste, with a very acid reaction. When the soup was given, the milk at once became coagulated; in about half or three-quarters of an hour afterwards, the whole formed a whitish homogeneous and very acid pulp. No sign of fermentation was ever observed in these mixed matters. The sugar found in the latter, whether examined at the beginning or at the end of digestion, was always in the state in which it exists in the cane.

After eight days of observation, M. Bernard resolved to divide the pneumogastric nerves. The dog having fasted for twenty-four hours, the experimentalist withdrew the apparatus, which habitually closed the fistula, and cleansed the interior of the stomach with a soft sponge. The viscus manifested a marked sensibility, and contracted upon the foreign body, the mucous membrane pouring out an abundance of gastric juice. Division was then made of the pneumogastric nerves in the middle of the neck. Immediately the mucous membrane, which was turgescent, shriveled up and became pale, as though it was bloodless. Its sensibility and motion ceased, the production of the gastric juice was instantly arrested, and an abundant secretion of a ropy mucus, with a neutral reaction, soon succeeded in its place. Some morsels of flesh, and some soup, with sugared milk, were then introduced into the stomach. In an hour's time the bread was found softened, and saturated with the mucus; the milk was not coagulated; the meat had not undergone any alteration; and the whole alimentary mass presented a neutral reaction. At the end of two hours things remained precisely in the same state.

After eight hours M. Bernard found in the stomach a sort of whitish pulp, with an extremely acid reaction. But there was no difficulty in proving that this acidity arose from a lactic transformation, which was effected in the midst of these matters by the sugared soup. The meat had not experienced the least change, and all was found in the same state after a lapse of twenty-four hours.

We may observe from this first experiment, said M. Bernard, 1st, that the division of the pneumogastric nerves not only extinguished sensation and motion of the stomach, but that it also instantaneously arrested the secretion of the gastric juice.

2d. That after this division, digestion did not take place, since, twenty-four hours afterwards, the pieces of meat introduced into the stomach were found entire and unaltered.

3d. It was especially remarked, that in the absence of the gastric juice, spontaneous decomposition took place in the midst of the matters contained in the stomach, which was demonstrated by the lactic transformation, developed by the agency of the soup and sugared milk.

In other dogs in which he had divided the pneumogastric nerves, M. Bernard perceived, after three or four hours of ingestion, conversion of the cane-sugar into grape-sugar; and at the end of ten or twelve, lactic transformation was complete. When the alimentary substances, as the meat for instance, were not susceptible of giving rise to acid decomposition, the neutral reaction of the stomach continued throughout. Thus two series of chemical phenomena of a very different nature may take place in the stomach, according as this organ receives, or is deprived of its normal nervous influence. In the former case gastric juice is produced, which effects chymous dissolution of the aliments. In consequence of this action, the substances contained in the stomach are submitted to special decompositions, and they lose the property of fermenting or reacting upon each other. Thus the gastric fluid prevents putrefaction. If, on the contrary, the stomach is deprived of the influence of the eighth pair of nerves, digestion is arrested, and the articles of food, not modified by the gastric juice, react upon each other.

M. Bernard related a more recent experiment which rendered the preceding facts still more evident, whilst it proved that absorption may take place in the stomach, even after the division of the pneumogastric nerves. It is known that emulsine and amygdaline are two innocent substances when they are administered by themselves, but that they develop hydrocyanic acid and become a violent poison when placed in contact.

Having taken two dogs that had fasted, Mr. B. divided in one of them the pneumogastric nerves. In the stomach of each animal he injected a dose of emulsine, and about half an hour afterwards an equal quantity of amygdaline. The dog in whom the nerves had been cut died at the end of a quarter of an hour, with symptoms of poisoning by hydrocyanic acid, the other survived without experiencing any symptoms. In the latter case, the emulsine, modified by the gastric juice, had lost the property of reacting on the amygdaline.

The author concluded from this last series of experiments, that in digestion the alimentary substances are exclusively submitted to the powerful influence of the gastric fluid. Their natural affinities then appear in some manner destroyed, and no spontaneous decomposition is effected between their elements.

That after division of the pneumogastric nerves these reactions take place, owing to the absence of gastric juice from the stomach.—*Prov. Med. and Surg. Journ.*, July 31, 1844.

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4. *Transmission of Hydatids by Contagion.*—Some highly interesting and curious researches on this subject have recently been published by Prof. Klencke, of Brunswick. After commenting upon the vague manner in which the term hydatid has been applied, the author proposes the following definition:—"Every vesicular production found in living organized tissues, which is provided with spontaneously moving organs, or which has at least the power of reproduction, apart from the tissue in which it is lodged by giving birth to individuals similar to itself." The different species are then characterized, the situations in which they are commonly met with pointed out, and many other particulars connected with the natural history of these productions, noticed.* The most important part of the memoir, however, is that occupied with an account of the experiments performed by Professor Klencke upon propagating hydatids by means of inoculation. With the object of examining the reproductive powers of the false hydatid, (*Hydatis spuria*,) he injected warm water containing some of these hydatids, collected from the brain of a fresh human subject, into the abdominal cavity of two puppies and two kittens. After the injection, the opening was carefully closed, the animals were restored to their parents and grew perfectly

* [See No. XIII. of this Journal for Jan. 1844, p. 196.]

well. At the end of three months he found upon examining the abdomen, in setting out from the punctured wound, an adherence of the parietal layer of the peritoneum, with the epiploon at the seat of puncture, and upon this adhesion, as well as upon the internal surface of the peritoneum, in the neighbourhood of the cicatrix, there existed in both the puppies, and in one of the kittens, a very great number of false hydatids. In the other kitten, in which no adhesions had taken place, there was no trace of these productions in the neighbourhood of the cicatrix, whilst upon the peritoneal surface of the bladder, a mass of false hydatids was found projecting into the abdomen.

Some very small hydatic cellules were taken from the plexus choroides of a man, and with them the orbit of a hen was inoculated. The inflammation which supervened subsided by the eighth day. At the end of thirteen weeks the whole external wall of the orbit was tumefied, and the eye pushed inwards. Upon examination after death, the orbit was found filled with a cellular mass containing a very great number of false hydatids. The whole brood of these hydatids was injected into the femoral vein of a kitten. At the end of three weeks the animal became sullen and habitually sleepy. Upon examination there was found in the heart, and especially in the right auriculo-ventricular orifice, a fibrinous and gelatinous precipitate, containing an innumerable quantity of false hydatids.

The false hydatids are more rare in the lower animals than in man, and their transmission is more easily effected when the species of animal inoculated is not far removed from that which furnished the parasite. In regard to the acephalocysts and echinococci, the author says that he has found the former in the milk of the cow, and floating along with them, in the serum of that fluid, the small ovules that are met with in the bodies of these animals. Both forms of hydatid are met with daily in the flesh and blood of animals, and if the process of cooking does not destroy them, we must run continual risk of contagion.

With a view of ascertaining what effect digestion would produce upon them, he instituted the following experiment:—Some full-grown echinococci were placed in the gastric juice of a dog, and in that of a man; at the end of three hours they appeared dead, their head being retracted, and they exhibited no signs of movement. After having washed them well in warm water, they were introduced into the subcutaneous cellular tissue of the thigh of a kitten; eight days afterwards the wound had cicatrized. He next took some echinococci, which had been immersed in gastric juice, diluted with half the quantity of milk or water, and inoculated a young dog by an incision in the abdomen, reaching to the peritoneum, but without opening the latter, upon which he placed two of the parasites; the wound was accurately closed by suture, and at the end of three weeks he found a cellular and highly vascular cavity, containing a yellowish serosity, in which were two echinococci, remarkably modified in form. They were transformed into vesicles, covered upon their external surface with a number of gemmules and isolated cells, supported by pedicles. Examined under the microscope, these cells, upon being crushed, gave exit to a multitude of other small cells, similar to those found in the body of the acephalocysts, and which represented the ovules. The hydatids being open, exhibited upon their internal surface a still greater number of gemmules, pediculated cells, and other cells, floating freely in the liquid.

From an extensive series of experiments, Professor Klencke deduces the following conclusions:—1st. That in all hydatids we observe a cyssiparous and oviparous reproduction.—2d. That there are false hydatids, which propagate by blastoderm (blastidie.)—3d. That all hydatids are transmitted from one organism to another, and being found in our fluid aliments, and in the flesh of animals, can be transmitted by infection.—4th. That the acephalocysts are not distinct from the echinococci, but merely the ova of the latter, with or without the parent cyst.—5th. That whatever be the way by which they have entered the animal system, hydatids can be conveyed by the current of the circulation.—6th. That certain agents in the organism and medical substances have the power of destroying them.—*Annals of Nat. History*, from *Gaz. Méd. de Paris*, Dec. 30, 1843.

5. *Reunion of a divided Nerve.*—Dr. Oke relates, in the *Provincial Medical and Surgical Journal*, July 24th, 1844, the following interesting fact in a physiological point of view.

"In cutting through the muscles in an operation for necrosis of the humerus, the musculo-cutaneous nerve was unavoidably divided, which occasioned the instantaneous dropping of the hand. This appeared at first to be an unfortunate result, as it was feared it might occasion the permanent loss of the hand and deprive the patient of the power of writing, for he could use his pen tolerably well.

"To make up for so serious a deprivation in some degree, as soon as the state of the right arm would admit of it, he was sent to a schoolmaster to be taught to write with his left hand, which, in about four months, he accomplished; but at the end of this time I was gratified to observe a returning power in the right hand. The power gradually increased; and in the course of a few weeks he completely regained its use, and thus was enabled to write with both hands.

This was an important fact in physiology, inasmuch as it showed that the trunk of a nerve, though it be divided and its ends kept apart for a considerable time, might eventually unite and regain its normal functions."

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6. *Open Foramen Ovale—no cyanosis.*—Dr. Woodhouse exhibited to the Reading Pathological Society a heart taken from a woman aged 71, who died of apoplexy. The foramen ovale was patulous to a considerable extent—about half an inch; the valvular portion of the septum auriculorum unusually large. There were no symptoms during life, as lividity of countenance, deficient nutrition, &c., to indicate such a condition.—*Prov. Med. and Surg. Journ.*, July 24, 1844.

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7. *Metallic Mercury in the blood and organs.*—Dr. Oesterlin has discovered, by means of the microscope, minute globules of metallic mercury in the tissues in the blood, and in the secretions of men and animals to whom mercurial ointment has been given internally and applied by frictions to the skin.—*Gaz. Méd. de Paris*, Jan. 5, 1844, from *Roser und Wunderlich, Archiv. fur Physiologische Heilkunde*, 1843.

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8. *Microscopic Anatomy of Tubercles.*—The following are some of the most important conclusions of an elaborate memoir, that was recently communicated to the Academy of Sciences.

1. The constant microscopic elements of tubercles are these: *a*, molecular granules; *b*, a hyaline interglobular substance; and *c*, the proper corpuscles, or globules of tuberculous matter. These globules contain a number of molecular granules, but no distinct nuclei. They are not affected by water, ether and the feeble acids; but they are dissolved by the strong acids, as well as by ammonia and caustic potash.

2. The opinion of certain pathologists, that tuberculous deposit and its globules are only modifications of purulent matter, is contradicted by the result of microscopic inspection; the differences between them are strong and decided. The corpuscles of the latter are considerably larger, of a regularly spherical shape, and contain from one to three nuclei: they are, moreover, usually free and isolated: whereas, those of tuberculous matter are, especially in the crude state of tubercles, closely joined together. The globules of cancerous matter are twice or even four times as large, and they contain a nuclei, in which again from one to three nucleoli are often observable.

3. In sarcocele and also in scirrhous and encephaloid tumours of the mammæ, we not unfrequently find a yellowish, cheesy-looking substance, which much resembles genuine tuberculous matter; but a careful examination with the microscope clearly shows that it consists entirely of globules of cancer infiltrated with fat.

4. When tubercles soften, their interglobular substance liquifies, the globules separate from each other, and may then, by absorbing a certain portion of the fluid, become larger; this change does not constitute an increased growth, but, on the contrary, the commencement of the process of decomposition.

5. The pus, which is found blended with the softened tuberculous matter, is supplied by the surrounding tissues and is by no means the result of any transformation of the matter itself; but the pus, it must be confessed, quickly alters it, and renders its elements much less easily recognizable.

6. The globules of softened tubercles become ultimately dissolved in a granular fluid, and thus the *ramollissement* of their substance passes fairly to the state of diffluence.

7. The cretaceous condition of tuberculous matter presents, under the microscope, the appearance of amorphous mineral granules, blended often with crystals of cholesterine and colouring matter. A part of the tuberculous globules is then removed by absorption, while the other portion remains for a long time in an unchanged condition.

8. Occasionally we find, in tuberculous deposit, corpuscles of fat, melanosis, greenish-coloured globules and crystals which have the form of those of the ammoniaco-magnesian phosphate. Besides these admixtures, we may find, blended along with them, the elements of inflammatory and suppurative action, and various sorts of epithelial exudation; all of which tend to modify the essential microscopic features of the tubercles.

9. The seat of tubercles in the lungs is usually the inter-vesicular elastic cellular (or areolar) tissue: sometimes, however, they are secreted into the air-vesicles themselves and into the capillary bronchial tubes.

10. The semi-transparent gray granulations of the lungs are composed of tuberculous granules, interglobular substance, which is more abundant and more transparent than in the yellow tubercles, and of pulmonary fibres more or less altered in their appearance. They are not invariably the "point de depart" or primary condition of the miliary yellow tubercles; as these latter are sometimes developed as *such*, from the very commencement of their deposition.

11. Microscopic examination most decidedly exposes the fallacy of the opinion that the gray granulation is the product or effect of inflammatory action.

12. A vomica or tuberculous excavation is in every respect analogous to a tuberculous ulcer of the skin or intestinal canal; it is not necessarily preceded by, or the result of, the suppurative process. As a general remark, it may be asserted that phthisis is accompanied with an ulcerative diathesis.

13. *The* fluid of pulmonary excavations contains the following elements: *a*, tuberculous matter, with globules which are either much more turgid than usual, or are altogether diffluent; *b*, globules of pus sometimes in small quantity; *c*, puoïd globules; *d*, granular globules; *e*, globules of mucus or of muco-pus; *f*, blood globules; *g*, pulmonary fibres; *h*, black pigment; *i*, epithelium shreds; *j*, crystals; and *k*, globules of fat. (Surely there is a good deal of hair-splitting nicety in such an enumeration as this.)

14. The cavity of a vomica is lined with a pyogenic membrane, the formation of which may be regarded as a curative effort of nature to isolate the cavity from the surrounding tissue, and thus to favour its cicatrization. The cicatrization is in many cases promoted by a new secretion of fibrous matter, and occasionally also of a chalky deposit at the same time.

15. The thickening of the pleura over the seat of tuberculous deposit is the result not of inflammation alone, but also of an augmented nutrition or hypertrophy, in consequence of the increased flow to it of the blood, which formerly permeated the (now obliterated) capillary vessels of the surface of the lungs. It thus becomes a supplementary organ of circulation in phthisis and serves to increase the anastomoses with the aortic circulation by its intimate adhesions with the parietes of the chest.

16. The liver is often the seat of extensive tuberculous deposit; and this lesion may readily be mistaken for cancerous transformation. The distinctive microscopic characters are most to be trusted to in the pathological diagnosis of such cases.

17. The fatty degeneration of the liver and heart—so accurately described by M. Bigot—exhibits a tendency to the internal deposit of fatty matter in phthisis,

while all the fat of the external parts of the body is at the same time entirely absorbed.

18. We occasionally find a quantity of tuberculous deposit in old membranous deposits on the pericardium. In a case where the pericardium adhered firmly to the surface of the heart and all the surrounding parts, numerous anastomoses between the ramifications of the coronary vessels and those of the surface of the lungs were found to have been established.—*Med. Chirurg. Rev.*, July, 1844, from *Gazette Médicale de Paris.*

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9. *Colchicum a substitute for Ergot to induce uterine contractions.*—Dr. Netta relates, in *Il Filiatre Sebezio*, a case of abortion, in which the placenta was retained, and the uterine contractions had ceased. Two doses of powdered root of colchicum, at an interval of half an hour, were prescribed by Dr. N.; and soon after the second dose uterine contractions came on. Whether these were the effect of the remedy or not must be determined by further experience. It has, however, been asserted by others that colchicum possesses octyocic properties.

10. *Therapeutic employment of the Chloruret of Tin.*—M. Nauche has recommended the chloruret of tin in cancerous affections, and the following are the formulæ in which he prescribes it:—

Solution of the Chloruret of Tin.—Twenty-five milligrammes of the chloruret of tin, five hundred grammes of distilled water. This solution is given to the patient in the dose of an ordinary teaspoonful daily; each dose is taken in a cupful of gum-water. M. Nauche also prescribes the solution in lotion as a dressing for cancerous ulcers.

Ointment of the Chloruret of Tin.—One to two grains of the chloruret of tin, thirty grammes of lard, mixed together, and made into a very homogeneous ointment, which is to be divided into eight equal portions, one of which is to be employed daily in friction, on the inner parts of the legs or thighs. M. Nauche avers that he has derived great benefit from the use of these two preparations in cases of glandular enlargements, in scirrhous affections, and even in the treatment of ulcerated cancers.—*Med. Times*, from *Bouchardat's Annuaire de Thérapeutique* for 1844.

11. *On the Therapeutic Action and Uses of Ergot of Rye.*—By M. Sachero, Professor of Clinical Medicine in the University of Turin.

I. General Remarks.—The author commences his paper by showing that, from time immemorial, the ergot of rye has been used as a means for accelerating the progress of labour; but powerful as it is as an agent for attaining this end, he believes that it is only capable of doing so when the process has already commenced, and that to ensure success, even then, it should not be administered at too early a period. The fact that the ergot acts only in this manner, he considers a very important one; for, were it otherwise, it might be often used criminally for the purpose of causing abortion. In proof of this view, that the ergot acts more as an assistant than as a provocative to labour, he cites the following case: The mother of a family had become pregnant in a clandestine way and was desirous of procuring abortion; with this intent she took, for a considerable period, pills composed of the ergot, containing two grains in each, but without effect; having reached the eighth month, she commenced taking five of the pills at a time, twice a-day; in the course of twenty days, she took two drachms of the ergot, but with no other effect than that of causing slight pains in the loins, and some disorder of the stomach. At the end of the ninth month she was safely and easily delivered. It would appear that the child, however, had suffered from its use, for its skin was very red, and covered, here

and there, with a concrete and adhesive albuminous substance; it was sickly and feeble, and lived only twenty days.

This fact, then, he considers as proving that the ergot of rye, even in large doses, does not excite abortion, provided the mother and child are in good health. And this conclusion is not overturned by what occurs in the convulsive gangrenous affection arising in pregnant women from the use of bread containing the ergot, because, in this case, there is a true poisoning, by means of which the conception is destroyed, and then the uterus, sooner or later, contracts and expels the foreign body, as always happens, whatever may have been the cause of the death of the fœtus.

The abuse of the ergot of rye in pregnant women may thus cause the death of the fœtus, and at last either produce abortion or parturition; but the inducement of labour, thus ascribed to the medicine, is only produced by its having first destroyed the child, whose body afterwards causes uterine contractions, and, by the continuance of the medicine, these latter may be sustained.

Those who have been in the habit of administering the ergot in tedious and difficult labours have not failed to observe that it had also a power of arresting hemorrhage, more especially in cases of abortion. Hence the name hemostatic. It has been given for this purpose by Atlee, Shalcross, Dewees, Marshall Hall and Speirani of Pavia; the latter, in his clinical researches, prescribed it, not only in uterine congestions and menorrhagia, but also in epistaxis, pulmonary hemorrhage and hæmaturia. The experience of Speirani as to its usefulness in pulmonary hemorrhage is confirmed by Sachero, who cites two cases of abundant hemoptysis cured by it. It has also been used by Bazzoni, who, in 1831, published a work on the subject, in which he announced the following conclusions: 1st, That the ergot of rye is a certain remedy in uterine hemorrhage and leucorrhœa. 2d. That the disagreeable sensations caused by it in the head are merely temporary. 3d. That, if administered with prudence, it is without danger. 4th. That it is equally efficacious, whether the discharge be active or passive. 5th. That its use is beneficial, even in those cases where the uterus and its appendages are affected with organic disease. 6th. That menstruation is not disturbed by its use. In the same year Pignacca also published some cases of hemoptysis and menorrhagia cured by the same means; and similar facts have been published by Cubini, F. Müller and others.

The investigations of M. Sachero, however, as to the employment of this substance as a therapeutic agent extended still farther. "Reflecting," he says, "on its beneficial effects in urethritis in man, effects due to its hyposthenic action on the vessels of the mucous membrane, I conceived that the same action might extend to the mucous membrane of the whole genital apparatus, and in consequence, I tried the use of the ergot in involuntary seminal emissions, and particularly in cases the most obstinate; the result exceeded my expectations; the cure was invariable; and I believe I have solved the problem which perplexed Lallemand and others. I published my observations on this subject in the *Giornale delle Scienze Mediche* in 1839. In the four cases which occupied my first note, I had remarked that there was irritation of the gastro-intestinal mucous membrane, and this led me to believe that seminal emissions had their origin in a hypersthenic state of the mucous membrane of the genital organs."

Some details regarding the good effects of the ergot in intermittent fevers and paraplegia are here given.

The latter facts confirm the author in the opinion that the elective action of the ergot is specially directed to the inferior portion of the spinal cord. He cites some cases of obstinate bronchitis, from his clinical reports, which yielded as by enchantment to the use of this remedy; and, lastly, a case of severe otorrhœa which occurred in a young lady of a lymphatic temperament, who, after angina, was attacked with suppurating otitis, accompanied with head symptoms and a fever. Repeated blood-letting and the other usual remedies were tried, but without the least avail. Injections into the ear were then tried, consisting of an infusion of the ergot, made with 4 grammes of the latter to 120 grammes of boiling water; the medicine was, at the same time, given internally; there

was immediate melioration, and a complete cure followed in the course of a month.

II. Pharmaceutical Remarks.—The following details as to the mode of treating the ergot M. Sachero owes to personal communication with M. Bonjean, the celebrated pharmaceutist of Chambery, whose analysis of ergot is the most careful and recent which we possess. The active principles of this powerful remedy may be reduced to two; the watery extract soluble in cold water, and the resinous extract soluble in alcohol. Desirous of studying the effects of these extracts separately, he caused M. Abbene, apothecary to the Hospital Saint Jean, to prepare a certain quantity of each. The following was the method pursued: Three medicinal pounds weight of the powdered ergot, of good quality, gathered towards the end of harvest when in a state of maturity, were treated with boiling water by displacement, and a liquid obtained which, on cooling, deposited a sediment composed of the resinous extract, and a portion of gum; the fixed oil rose to the surface and was easily separated by decantation. The diaphanous liquid evaporated by means of a water bath, yielded 245 grammes (8 oz.) of watery extract, to which Bonjean has given the name of hemostatic extract, (extrait hémostatique) and which is composed of ergotine and a little gum. The sediment mentioned above, as well as that remaining in the filter, was afterwards treated with alcohol at 25°; and this solution, filtered and evaporated, yielded 20 grammes of resinous extract. Thus the ergot, in these operations, yielded nearly a quarter and a half of its weight of watery extract; and hardly a 57th of resinous extract. He does not consider it necessary to give any details respecting the oil, whose proportion may be about 35 per cent., and for the reason that it has no special action on the uterus; its use, moreover, is not unattended with danger. In a letter lately sent by M. Bonjean to the Academy of Sciences, through M. Dumas, he stated that he had discovered a method of freeing the hemostatic or watery extract from the albumen which it contains, by submitting to ebullition, by means of a water bath, the solution made with cold water by the method of displacement; the ebullition causes the albumen to coagulate, and it can afterwards be readily separated. The purest extract is that obtained by evaporation; the author names it ergotine, but this is incorrect, as it is not a simple body. When boiling water is used for the first method by displacement, there is this double advantage, 1st. That of coagulating the albumen immediately, which can be afterwards separated from the liquid; 2d. It is not necessary to leave the liquid for any length of time in a state of rest, as done by Bonjean, to obtain the resinous extract, as that is effected by the simple act of cooling. Decompositions so frequent, especially in summer, are thus avoided.

III. Dynamical Action.—Having thus obtained a sufficient quantity of the two extracts, he instituted a series of experiments to determine the dynamical action of each; that their action would not be identical, he conceives, might be conjectured from their appearance; the watery extract is of a reddish-brown colour, with a smell of ozmazome, and has a slightly pungent and bitter taste, similar to that of spirit grain, but not astringent; whilst the resinous, on the other hand, is of a deep brown colour, with no particular smell, and is very pungent and slightly bitter to the taste.

A. *Watery extract.* The astringent (hemostatic) power of the ergot, whether given in powder, infusion or decoction, has been long known. It is probable that if the infusion be used, more especially after allowing it to cool, we obtain only the watery extract or ergotine of Bonjean; consequently, this form should be preferred if we wish to control hemorrhage, or any other discharge arising from acute or chronic inflammation, such as leucorrhœa, or purulent discharge from the ear. The facts already cited prove this. But it is to Bonjean we are indebted for having proved by experiment, that the hemostatic power belongs exclusively to the watery extract. Some cases follow here of uterine hemorrhage arrested by means of this substance. It was also given to two women in labour, which was advancing slowly, with sluggish contraction of the uterus. 30 grains of the extract, (a gramme and a half,) were prescribed in 120 grammes of water; no effect followed; and uterine contractions only appeared some hours later,

consequently they could not in strictness be attributed to the remedy. "It appears, therefore, that the watery extract, instead of hastening labour, retards it, and that the power of producing uterine contractions does not belong to this ingredient of the ergot."

B. *Resinous extract.* In consequence of the latter supposition, he should next have proceeded to inquire if the resinous extract possesses the power of inducing uterine contraction. But facts, he says, are yet wanting to decide the question. As far as is known, however, it would appear, from the experiments instituted by Bonjean on rabbits and dogs, that it has no sensible effect upon them. Our author tried the effect of it on his own person, and also on that of a friend considerably younger than himself. "I took," he says, "at eight in the morning, and with an empty stomach, 16 centigrammes (5 grs.) of the resinous extract, prepared by M. Abbene, and made up into a couple of boluses, with the extract of violets; the one was taken at the time mentioned, and the other in the course of an hour. I had hardly swallowed the first dose when I experienced a sensation of heat in the throat, nausea and oppression at stomach; these sensations were felt for a quarter of an hour, and they returned, but with less severity, after the second dose. At a later period, I felt some heat and itching at the base of the glans penis; and during the course of the day a few drops of mucus escaped from the urethra." His friend took the medicine in another form. He dissolved 25 centigrammes in alcohol, diluting it afterwards with water, and he took the whole in two doses; he experienced some pain and heat of stomach, then pain in the bowels, after which the latter were moved; his habit was usually constipated. Ten days after, Sachero again repeated the experiment on himself; taking 10 grs. in two doses, he experienced merely a sensation of heat in the bowels, and some smarting in the urethra. Six days after he took 15 grs. with nearly the same effects. No other conclusion, he thinks, can be drawn from these experiments than that the resinous extract is perfectly harmless. Bonjean had already arrived at the same conclusion in regard to the watery extract; and this circumstance would lead us to believe, with this eminent chemist, that the poisonous principle of the ergot is the oil already mentioned. In conclusion, M. Sachero agrees with those accoucheurs who believe that the most suitable form in which the ergot can be given is the simple powder, and that without submitting it to any further preparation.

C. *The fixed oil.* It has been already stated, that, according to the analysis of Bonjean, the quantity of this oil in the ergot may amount to about 35 per cent., and that it is this element which constitutes its poisonous principle. It produces on animals all the symptoms of poisoning by the ergot in substance; and the same appearances are found in the body after death.

IV. Conclusions.—From what precedes, then, it follows, 1st. That the watery extract (hemostatic extract or ergotine of Bonjean,) is a hyposthenic remedy acting on the general vascular system; and that by means of it we can control hemorrhage, morbid sero-mucous discharges, and lessen over-action of the heart. Its action is clearly demonstrated to be on the vessels of the uterus, because, by its aid, we can control menorrhagia, threatened abortion, slight metritis and excitement of the uterine capillaries. The circulatory system being dependent on the great intercostal nerve, it follows that the action of the watery extract extends to this nerve and its numerous ramifications, as especially to those which preside over the life and functions of the uterine vessels. 2d. The resinous extract probably acts as a stimulant and its action extends to the nerves both of sensation and motion of the uterus. It is highly probable that when the ergot is administered in powder, it is in this extract that the principle resides which rouses into activity the inert uterine contractions which had previously commenced. 3d. The action of the ergot, when administered in its natural state, appears to be of two kinds; the one, as in labour, affects the sanguineous system, the energy of which it diminishes (hyposthenises) by means of the ergotine; the other, is upon the nerves of the uterus, which it stimulates by its resinous principle. To this double action must be added a third, equally hyposthenic, that of the oily or poisonous principle. Thus, then, in practice, several indications may be ful-

filled by the isolated administration of these principles, and by the ergot in its natural state. The study of these cannot fail to extend its power, as a therapeutic agent, when we have first determined the special circumstances in which they should be applied. 4th. The ergot only acts beneficially in labour, if this process has already commenced, when the amnion is ruptured, the position of the child natural and the uterine contractions have been arrested or enfeebled, either by oppression of the forces, or by actual debility. In this latter case, the resinous extract is to be preferred to the watery or ergotine, consequently, the ergot has no effect in inducing abortion or labour, unless there is previously a commencement of uterine action. There is, nevertheless, an exception to this rule; and that is when the fœtus is dead, or the uterus contains a tumour; but when this occurs the uterus is in an unhealthy state, and, most generally, the ergot only acts by exciting the organ to contract, or facilitates and hastens the operation if already begun. If the ergot is given in large and repeated doses, previous to the commencement of labour, it either destroys the child, producing immediate labour, or at all events it sickens it. 5th. Its use is strongly indicated in hemorrhage, arising from partial detachment of the placenta. In this case, life, as is well known, is in danger, if the flooding is great and labour not speedily accomplished. The ergot, in its natural state, or one or other of the extracts, may be prescribed, according to the state of the patient. There are cases where the woman suffers from a true and general plethora of the uterus, recognizable by the state of the pulse, which is full and slow, dyspnœa, the swollen state of the veins of the hands, legs and feet, which become blue, and by a severe throbbing headache. In these cases the patient should be bled once or twice, and then, if the uterus still continue inert, the ergot in its natural state may be prescribed, if it is thought proper and necessary to excite labour; if this is not considered desirable, then the ergotine should be had recourse to, if we wish to prevent hemorrhage and abortion. A bleeding should always precede the remedy in cases of congestion of the uterus. 6th. If the uterus does not expel the placenta spontaneously, within a few hours after the birth of the child, the use of the ergot re-excites the contractions in the course of seven or eight minutes, or in a quarter of an hour at most. 7th. In the preparation of the remedy it is an essential circumstance that the ergot be not gathered till it has reached a state of perfect maturity, towards the end of harvest, and in places with a free eastern exposure. If it be not perfectly ripe, it has either no action, or it is very feeble, as shown by the experiments of Bonjean. In this case it merely contains a little watery extract or ergotine, but no fixed oil, and, consequently, is not poisonous. It is probable that it has been owing to the different degrees of maturity of the ergot, that the different effects, observed by certain authors, are to be attributed. It is also known that the ergot loses its virtue if it has been gathered more than a year, or if it is worm-eaten, has been exposed to the air, been roasted at too high a temperature, &c. It should only be reduced to powder when about to be used. 8th. It is more advantageous to give the ergot in small and repeated doses than in large ones which are often rejected by the stomach. An agreeable way of giving it is to suspend it in mucilage and add some aromatic syrup. We have already spoken of the manner of preparing an infusion by boiling water; the oil may be separated by decantation, and there remains the pure ergotine. The infusion may also be made with cold water. The decoction allowed to cool is little more than an infusion made in the warm way.

This interesting article concludes with several cases of uterine hemorrhage cured by means of the watery extract; and with a case of abundant sero-mucous discharge from the genital organs, in a girl three years of age, which had resisted all the ordinary means of treatment, but was cured by a single dose (60 centigrammes) of the powder infused in warm water, and then allowed to cool.—*Lond. and Ed. Month. Journ. Med. Sci.*, Aug. 1844, from *Giornale delle Scienze Mediche della Societa Medico-Chirurgica di Turino*, in the *Annales de Thérapeutique*.

12. *Ipecacuan as a Counter-irritant.*—Dr. Cormack detailed to the Medico-Chirurgical Society of Edinburgh the result of his hospital experience of ipeca-

cuan as a counter-irritant in the form of ointment, as recommended by Dr. Hannay, of Glasgow.* Dr. C. had tried the ipecacuan in a great many cases, and in the proportion of 10 to 12 of them, it had failed to produce any eruption, even when the powder was in the proportion of half an ounce to an ounce of lard. In a few persons only, with a delicate skin, or who had had recent blisters on the surface experimented on, did he succeed in bringing out an eruption. The eruption was vesicular in three cases which were carefully observed. In the same persons on whose skin the ointment produced no effect, a good crop of pustules was in every instance brought out by one, two or three frictions with a liniment of equal parts of olive and croton oil. Dr. C. believed that there were many vegetable powders which would be found more active counter-irritants than ipecacuan.

Dr. Handyside and Dr. Douglas Maclagan stated that they had met with no good results from its employment. Their experience corroborated that of Dr. C.—*Lond. and Ed. Month. Journ. Med. Sci.*, Aug. 1844.

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13. *Arsenical Paste of Frère Côme.*—Arsenious acid is one of the best known caustics; it would certainly be preferred for cauterizing cancers, if its absorption were not to be dreaded. By employing it with care, nevertheless, and limiting its action, it may yet be usefully applied. Several receipts for arsenical caustic pastes are published in the Formulaire of M. Bouchardat; that of Frère Côme has lately attracted the attention of several surgeons. Frère Côme died without making known its composition: and M. Souberbielle, his relative and pupil, alone continued to make use of it with as much success as his master. M. Souberbielle communicated the formula to M. Manec, who applied the paste with very advantageous results. It is prepared in the following manner:—six grains of white arsenic, one gramme and ten grains of cinnabar, fourteen grains and a half of calcined sponge, powdered together. The proportion of arsenic is as from eleven to twelve to the hundred, and consequently stronger than in any known preparation, excepting that of Roussellot. When it is about to be used, the powder is mixed with a little water to the consistence of pap, and is then lightly spread over the ulcerated surfaces with a brush, care being taken to use only a small quantity, it being better to have recourse to repeated applications than to run the risk of considerable absorption. It is then covered with a piece of moistened agaric, which becomes detached at the end of ten, fifteen, twenty, or thirty days, sometimes later, and separates with the slough. After this separation has been effected, M. Souberbielle dresses the wound with the *yellow pommade of Frère Côme*, prepared as follows:—thirty-two grammes of yellow wax, forty-eight grammes of rose oil, seventy-five grammes of camphor, and one hundred and fifty grammes of Goulard's extract. This ointment is applied, spread upon linen, until the wound is cleansed of the whitish layer which covers it. If fungous excrescences should reappear afterwards, a renewed application of the paste is made, and repeated until the cancer is entirely destroyed. A very important remark is connected with the extent of the ulcer; if it exceeds three square centimetres, the treatment must be divided, in order not to risk absorption by too large a surface, and with that view not to cauterize a new portion until after the separation of the first slough. When the edges are callous, they must be stimulated by a blister, the caustic not acting except upon a moist and raw surface. M. Manec says he has ascertained by numerous experiments, that it is not necessary to remove the cancerous parts with a knife, before applying the arsenical paste, and that the diseased parts, whatever the thickness and depth of their roots may be, are specially and exclusively destroyed by the caustic, whilst the healthy parts are scarcely injured. M. Manec has also ascertained by experiments with Marsh's apparatus, that arsenic was absorbed in certain proportions, and that the urine yielded traces during a period varying from four to five days, according to whether absorption had been more or less rapid. The fæces have afforded traces of arsenic seven or eight days after the urine had ceased to yield any.—*Med. Times*, Sept. 1844, from *Bouchardat's Annuaire* for 1844.

* See No. of this Journal for Jan. 1844, p. 188.

14. *Prestat's Adhesive Plaster.*—The following composition is said never to crack, and not to inflame the skin:—Empl. diachyl. gum, four hundred grains, purified rosin, fifty grains; tereb. venet., thirty-eight grains, are mixed together at a gentle heat, and then twelve grains of gum mastich and twelve grains of gum ammoniac incorporated, and the mass spread on linen. In winter, it is advisable to add ten grains more turpentine and twelve grains of ol. amygdal.—*Ibid.*, from *Journ für Prakt. Chem.*

MEDICAL PATHOLOGY, AND THERAPEUTICS, AND PRACTICAL MEDICINE.

15. *Marsh Remittent Fever of the islands on the east coast of Africa.*—Dr. James B. Allen gives, in the *Edinburgh Monthly Journal of Medical Science*, (Aug. 1841,) the following very interesting account of the form of remittent fever which prevails in Madagascar and the adjacent islands of the east coast of Africa. We transfer it to our pages, as it is, we conceive, a valuable contribution to our knowledge of febrile diseases.

The earliest diagnostic sign of this fever was invariably, he states, "a feeling of nausea, experienced on going out in the morning, continuing for three or four hours, but never exciting vomiting, and gradually subsiding into perfect ease and quiet, attended even by appetite for solid food. There was, at that period, no foulness of tongue, and the pulse only differed from the natural state, in being somewhat slow and hard. The delusive interval of health lasted usually from two to four hours, and was then disturbed by a slight return of nausea, with languor, inquietude, yawning, chilliness and thirst. Shortly the nausea again went off; but the other symptoms became confounded with heaviness of inspiration, a sense of tightness over the chest, headache, and intolerance of light, pain along the spine, especially in the lumbar region, and an uneasiness, amounting to pain, throughout the whole frame, which the most enduring tried in vain to soothe by constant change of posture. Now the pulse is about 90, hard and irregular, but not full; there is throbbing of the temporal and carotid arteries; the face is alternately pallid and flushed; the tongue, florid at first, is gradually taking on a dirty white coating; the bowels are rather constipated, and the urine is scanty and high-coloured. Towards night the chilliness is displaced by a burning feeling without and within; the temperature of the skin is 100° of Fahrenheit; the thirst is more insatiable; and every symptom is aggravated as night advances. Next morning occasional fits of vomiting come on; and about twenty-four hours after the first accession, sheer exhaustion apparently induces a remission, attended by a disturbed and easily broken sleep of four or six hours, with slight diaphoresis. As the second evening drew on, so did all the symptoms return with greater violence. The pulse varied from 100 to 120, though it was in other respects as on the first day; there was burning in the eyes; considerable deafness; increase of the heat of the skin to 103°; vomiting of coffee-ground-looking matter, of sour smell and bitter taste, continued at intervals, with pain in the precordia; and, in short, the second night was passed as the first, but with far greater suffering from heat, thirst and pain shooting through the head. With the third morning came another remission, with sleep, if it could be so called. At this time, however, in all fatal cases, the remission was suddenly changed and sleep ended, by the patient getting up, talking over ordinary matters, pitying the already dead or dying, and thankfully declaring that, except the thirsty feeling, he was as well as ever. By and by a desire to sleep was expressed; and out of that comatose slumber the patient never awakes. Some of the sufferers died in the act of drinking, others while relieving the bowels; and a few, wrangling about imaginary evils, suddenly expired. The fever, however, generally ends fatally in a comatose state, and the tranquillity preceding is deceptive only to the sufferer himself; for the pulse may be counted at 120 to 130, and sharp; the tongue is brown or black, and dry; the nares are dilated

on inspiration; the conjunctiva is often either red or yellow; there is a cold clammy sweat, hiccup, considerable mental irritability, and an unmeaning drunken look. Such was the course the disease took amongst the Europeans and natives at Foul Point, in December, 1830, in the French garrison of St. Mary's, during the sickly seasons of 1830-1-2, and at Zanzibar and the Comoros, in the reputedly healthy as well as sickly months. At Budderam, a fort three miles distant from Foul Point, upwards of 300 out of 1100 native soldiers died. In the French garrison of St. Mary's, at the periods mentioned, the mortality was one-third of the whole. Not ten per cent. of those attacked recovered; and the then commandant, M. Tauretto, showed that relief detachments from Bourbon were always calculated on that ratio. At Zanzibar, in November, 1832, the captain and forty men, belonging to a French corvette, were seized, and not one survived the third day. In Madagascar many died on the second day; but most commonly, young and old, spare and plethoric, black and white, were all hurried off on the third. It is deserving of notice, that all who slept on board ship escaped: every victim seen or heard of, had passed one night on shore; and no instance of recovery was known in those who were taken on board affected. The writer had a vessel of one hundred tons moored within the reef at Foul Point under his charge, mainly for the purpose of protection from sickness. Such as remained in her all night were quite healthy; but not one slept on shore with impunity. The same occurred everywhere else. There is, however, a fact still more worth mentioning; no man labouring under any form of dysentery or diarrhœa was attacked. This was first observed at Johanna in May, 1833. Two dysenteric seamen were encamped on shore, and three healthy men, envying their inactive life, escaped from the ship, and, together with some men from an American ship, slept two or three nights in the tent. The consequence was that all died of remittent except the two former. Several other instances were subsequently mentioned; and, at St. Mary's, exemptions of the same kind were quite common. It has been mentioned that, in all fatal cases, the third day's sleep was the precursor of death. In proceeding now to trace the signs of a favourable termination, we find that this day was also the critical one; and it was, therefore, anxiously watched. If the sleep alluded to remained unbroken for six or seven hours,—if the pulse fell to 90 or 100, becoming soft and full at the same time,—and if a sweat took place, unattended by any great reduction of temperature,—the patient was reckoned out of danger. On awaking, there was no desire to get up; indeed, weakness rendered that impossible. The intolerable thirst, headache, and every other bad symptom had ceased; and no ailment remained but an acute sense of hearing, giddiness on raising the head, and soreness in the muscles of the back and limbs, resembling what is felt after a long journey on foot. The acuteness of hearing spoken of here sometimes came on during the second day in those who recovered. It was very distressing for the first six weeks or two months of convalescence: and every wave that burst on the distant reef was counted with pain and even dread. It was astonishing to behold the change wrought in three days. The entire body was emaciated to an extreme degree; and the yellow complexion, hollow eyes, sunken cheeks, and decrepid countenance, made the invalid for a long time difficult of recognition. In most cases the hair either fell out or turned gray; the limbs continued long œdematous; in many the liver or spleen, or both, increased in size; and when at length health was regained, attacks of intermittent fever, on the slightest cause, for some years, rendered life a dear purchase, in spite of perfect security ever afterwards from a return of the original malady.* In concluding this account of the distinguishing features of fatal and favourable termination, a history may be given of such morbid appearances as it was in the writer's power, now and then, to observe, amidst opposing prejudices and other circumstances. As rapid decomposition renders interment necessary almost immediately after death, the few inspections made were very cursory. On opening the head, a clear or

* No instance could be learned in any place of the disease recurring, and Europeans and natives alike fearlessly calculated on this immunity.

whitish serous fluid was found in considerable quantity under the arachnoid, and a similar effusion presented itself in the ventricles. The vessels of the pia mater were well marked and black. The substance of the brain, when cut across, exhibited black points of blood, and, around the ventricles, it broke down before the knife, showing a degree of softening. The lungs, liver and spleen were engorged with dissolved black blood, and the two last organs were enlarged and and dark, though of almost natural consistence. The pericardium was thought to contain more fluid than it ought, and the heart had assumed a black appearance. There was a dull redness of the inner coat of the aorta and venæ cavæ, which could with difficulty be removed by washing. The stomach and duodenum contained a quantity of chocolate-coloured matter, similar to, but of more consistence than what was vomited during life, and a greenish-brown bile, with which the gall-bladder was partially distended, was found in the duodenum. The mucous membrane of these parts was of a dark livid hue, thick, and soft enough to be easily removed by the nail. According to the distance from the stomach, so did the contents of the alimentary canal gradually darken, until, in the colon, the thin fæces were quite black. Excepting a blush, such as might be expected where purgatives had been freely administered, there was no farther structural alteration in the tube; and neither kidneys nor bladder showed any thing remarkable.

"The foregoing marks of disease were seen alike in blacks and whites, and where no remedies had been employed as well as where all had been made use of.

"The medical treatment pursued at the commencement of the first sickly season at Foul Point, viz., in December, 1830, was remarkably unsuccessful, and, indeed, at no time afterwards had very much to boast of. As the disease was known only from report, no instructions had been given to apply immediately at its outset. Besides, the nausea was reckoned too trivial; and in the first Europeans seized, four in number, nothing was done until the fever was fairly developed. Aware of the value of the lancet in the tropics, and inferring it would be no less beneficial here than in the East and West Indies, venesection was employed freely and repeatedly in these four cases, as also in two others at the very beginning of the complaint. The early-drawn blood was dark and buffy, and relief was for the time procured. Purgatives of sulphates of soda and magnesia, castor and croton oil, and compound colocynth pills, with calomel, were administered, according to the condition of each patient's stomach. Soon, however, the paroxysm returned, and bleeding was again had recourse to. This time the blood was more dark and dissolved, and the second temporary relief appeared to be induced by an accumulated degree of debility, instead of any real diminution or abatement of the malady itself. In short, under these depleting and purging plans, three of the first taken ill died on the morning of the third day, and the other three lingered until the afternoon. Out of a party of nine Europeans at Foul Point, in the season mentioned, in eight of whom bloodletting had been carried to the extent of from forty to seventy ounces, only one recovered, he being the only one not bled at all. Abandoning the lancet, except in very plethoric subjects, another mode of cure was substituted, certainly as indiscriminately as the first, but not so universally useless. Believing that the early nausea might be a signal from the brain for relief through the stomach, the latter organ was cleared by antimonial solution. Permitting no early remission, vomiting was prolonged by diluents; the bowels were relieved at the same time with soap and water, by means of the pump; the hair was cut off, and a blister applied to the nape of the neck downwards, between the scapulæ; and, lastly, after the vomiting had subsided, fifteen grains of calomel, with one grain of opium, were exhibited. If, at the end of two hours, the stomach was not quieted, the calomel was increased to a scruple, and again given with the opium. Proper cooling and effervescing drinks, chiefly made from the lemon, which grew everywhere, allayed the thirst; and evaporating lotions were applied to the head. As soon as a purgative could be retained, one of those formerly mentioned, or jalap, was given with the calomel; and that the whole intestinal canal might be

speedily and effectually cleared, the operation was assisted by the enema pump, as before. Until the critical day had passed, the calomel, conjoined or not with opium, according to circumstances, was repeated every four hours in doses of ten, fifteen or twenty grains; and every eight hours, at farthest, free alvine evacuations were procured. In this manner quantities of thin, offensive, pitchy fæces were got rid of, the vomiting was arrested entirely, the thirst mitigated, the internal burning allayed; and although the headache continued severe, yet the shooting pain abated, and the first remission was rendered more decided as well as more prolonged. On the second day and night, Dover's powder and the warm bath were added to the remedial list. The first required caution; but when it excited vomiting, the matter was more bilious-looking, and soon got under by the calomel and opium, effervescing draughts, and the liberal use of the enema machine; but nothing afforded greater relief than the warm bath did on the second night. It was eagerly sought for, not only as a grateful antidote to every ill, but, as some said, "to die in comfortably."* By this time the headache had greatly abated; the pulse, though unaltered in frequency, was soft and regular, the skin was cooler by three or five degrees, of yellow tint in the face, and tending to transpiration. From the great local irritation caused by the blister, it was omitted in some instances; but as these omissions only proved further its efficacy in relieving the terrible head affections, it was persisted in and repeated afterwards, and the sore kept discharging by frequent renewals of the dressing. A piece of plantain leaf is the common dressing in the east, and surpasses every other by being cleanly, convenient, soothing and economical. When the sore is to be healed, the upper surface is to be applied; if not, the lower. Up to the decisive remission on the third day, this curative plan was persevered in, and, even after a favourable termination, it was not relinquished for some days, although the mercury rarely produced its constitutional effects. Contrasted with it, the method of depletion was sadly inferior at all stages. The effects of the more eligible practice thus summarily detailed were very uniform in all the different islands. In proceeding to state the rate of mortality, it must be observed that the calculation, as affecting natives only, applies to those of Madagascar, time and opportunity being wanting to gain information amongst the others. In 1830-1-2, out of ten Europeans, four only recovered, and these were men of more regular habits. With one exception, every grog-drinker died; and not one survived, if taken on board ship at any period of the complaint, whatever were his habits and temperament. The total number of sick during these three years, from Tamatave to Wohemar, was computed at one hundred and twenty. Amongst the natives, out of some hundreds treated, more than fifty per cent. recovered. It was calculated that about three hundred in every one thousand were attacked, and this great immunity (whilst not one European who slept on shore escaped, unless he was, as already stated, affected with dysentery or diarrhœa,) can only, as in other countries, be attributed to acclimatization. At St. Mary's, where blood-letting, blistering on arms and legs, kermes mineral, tisanes and lavements were trusted to, it has been stated that recoveries were ten per cent. Amongst the native population of that island, also those of the Madagascar main, from Tamatave northwards, who, under their own care, did nothing but drink burnt rice-water, and drench themselves with castor oil and infusions of glycyrrhiza, the proportion differed little or none. At Foul Point, where venesection was pursued, every man died; so also, as related, did forty-one men belonging to the French corvette at Zanzibar, treated on the same plan as their countrymen at St. Mary's. Many similar instances of whole-

* No little difficulty was met with in getting a vessel suitable for the purpose. A canoe was first tried, but was soon relinquished for the native bath. This was simply a bullock's hide newly flayed, attached by the corners to bamboos, so as to hang loose in the middle. It was very comfortable, and easily renewed where cattle sold for five dollars a head. Travellers improve their account of this kind of bath, by saying that the sick of some countries to the eastward are immersed in the still living entrails of the animal.

sale mortality could be adduced, but they correspond so exactly in the aggregate with those already mentioned, that they need not be gone into.

16. *Intermittent Insanity.*—M. Ballotta relates, in the *Bulletino delle Scienze Mediche*, 1843, a case of mania which had continued seven months—presenting a perfect tertian type. The patient was a female, forty-five years of age, who was attacked with encephalitis, caused by severe mental anxiety and exposure of several hours to a burning July sun, and which continued seventeen days, endangering her life. Convalescence became established on the 18th day, and she ate and talked with her family as usual. The 19th day she was attacked with acute mania, which continued until evening, when she became calm, ate with good appetite and slept well. The 20th she was perfectly well and tranquil all day; but, on the 21st day, there was a repetition of the scene of the 19th day. From this time up to the 11th April, 1843, when Dr. B. reported the case, the same condition of things continued. Quinine, and all other remedies, had failed to arrest the return of the paroxysms.

17. *Deaf and Dumb Child restored after the discharge of Worms.*—Dr. Schleifer relates, in the *Oesterreischische Medicinische Wochensschrift*, the case of a child 9 years of age who became deaf and dumb after suffering in early life from cutaneous eruptions, engorgement of the glands, &c. The loss of hearing was attributed principally to a fall and treated accordingly. The child became meagre and pale, dark around the eyes, the muscles of the face were in constant motion, the tongue white and loaded, breath offensive, constantly moaning, abdomen large and hard. Dr. S., suspecting worms, treated the child accordingly. In three weeks the child passed 87 lumbrici, and innumerable ascarides during five weeks, and at the end of the sixth week the patient had recovered hearing and speech.

18. *On the motive for the Scarification of the Gums during dentition.*—Dr. Marshall Hall says that there is no practical fact, of the truth and value of which he is more satisfied than that of the effect and efficacy of scarification of the gums in infants, and not in infants only, but in children. "The process of teething," he observes, "is one of augmented arterial action and of vascular action generally; but it is also one of augmented nervous action; for formation, like nutrition, secretion, &c., generally, is always one of nervi-vascular action, and of this the case in question is, from its peculiar rapidity, one of the most energetic. Like other physiological processes, it is apt to become, from that very character of energy, pathological, or of morbid activity. It is obviously, then, attended with extreme suffering to the little patient; the brain is irritable, and the child is restless and cross; the gums are tumid and heated; there is fever, an affection of the general vascular system, and there are, too frequently, convulsions of various degrees and kinds, manifested in the muscles which move the eyeball, the thumb and finger, the toes; the larynx, the parietes of the respiratory cavities; and the limbs and frame in general, affections of the excito-motor part of the nervous system, and of the secretions of the liver, kidneys and intestines, affections of the ganglionic division of that system.

"What is the precise cause and source of these formidable effects? Can the mere tension and irritation of the gum situated over the more prominent part of the teeth be the cause of such extensive morbid actions? I think not. The real source of these phenomena is in the entire dental system, in which actions of unusual energy and extent are going on,—sub-inflammatory they might be called, were they not, in reality, of an essentially different nature and origin. This undue action takes place in the fangs and sockets of the teeth in their whole extent, with their connections, vascular, nervous and membranous. But *the* focus from which the *nervous* actions emanate is, I believe, not as is generally imagined, the nerves of the mere *gums* seated over the prominent parts of the teeth, but the nerves which may be emphatically termed *the nerves of the teeth themselves*, the nerves which enter into the very fangs and substance of the teeth.

"*It is to the base of the gums, not to their apex merely, that the scarification should be applied.* The most marked case in which I have observed the instant good effect of scarification was one in which *all the teeth had pierced the gums!*

"This view of the subject may assist in removing the futile objections of some who have, without due consideration I am convinced, opposed my plan of frequent, often daily, scarification of the gums, to whom I would say, as my sole reply,—Better scarify the gums *unnecessarily* one hundred times than allow the accession of one fit or convulsion from the neglect of this operation, which is equally important in its results and trifling in its character.

"And it is not merely the prominent and tense gum over the edges of the teeth which should be divided; the gums, or rather the blood-vessels, immediately over the very *nerves of the teeth*, should be scarified and divided, as you would divide the vessels of the conjunctiva in inflammation of that membrane.

"Now, whilst there is fever or restlessness, or tendency to spasm or convulsion, this *local blood-letting* should be repeated daily, and in urgent cases even twice a day. I would here repeat my maxim,—Better do this one hundred times unnecessarily than have one single fit from the neglect of so trifling an operation. A skilful person does it in a minute, and in a minute often prevents a most serious attack,—an attack which may cripple the mind or limbs, or even take the life of our little patient, if frequently repeated. There is, in fact, no comparison between the means and the end, the one so trifling, the other so momentous."—*Lancet*, May 18, 1844.

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19. *Counter-irritants.*—The following rules derived from the tone and frequency of the pulse are suggested by Mr. Atkinson, of Westminster, for the application of counter-irritants, and are stated to be derived from the physiological law:—The greater the irritability of the constitution the greater will be the sensibility of the cutaneous surface. His observations chiefly apply to the time required for the production of the full therapeutic action of this class of remedies. If the pulse is turbulent, wiry and frequent, as from 100 to 170, from ten minutes to half an hour's application will do; if from 80 to 100, small and wiry, then from a quarter of an hour to two hours may suffice. In both these states of the pulse, if the skin is moist, a longer time will be required. In a slow pulse, under 70 in a minute, when there is some degree of softness accompanying it, from twenty to forty hours, on an average, may be safely relied on, as not being too long for full effects. We select the following cases as illustrative of the preceding remarks:—

Case 1. J. C., aged sixteen years, was suddenly attacked with typhus, and the ordinary remedies were administered. During the progress of the disease it was found necessary to have recourse to blisters and sinapisms to relieve the cerebral congestion commonly present in typhus. At this stage of disease the pulse was irregularly quick, wiry, and numbered about 150; a blister was applied to the nape of the neck, and sinapisms to the calves of the legs. The former vesicated satisfactorily in a quarter of an hour; the latter could not be endured longer than five minutes.

Case 5. A child, aged one year and six months, had suffered under congestive pneumonia; pulse 170. A blister was applied over the sternum, which had the wished-for effect within a quarter of an hour.

Case 7. A lady, aged sixty-three, who had for the last twenty years laboured under a bronchial affection, with profuse expectoration, at different seasons of the year, became a sufferer from influenza. Her pulse was small and wiry, average 130. It was thought advisable to apply a sinapism to the chest; it could not be endured more than ten minutes. A week after this, through the abatement of the disease, the pulse became lower, softer, and hardly increased to 76, and the poultices were re-applied, when it became clearly evident that they could be endured with impunity for more than half an hour.

Case 10. M. C., aged twenty-six, was suffering from chronic rheumatism in the right arm and shoulder. A blister had been applied over the part affected. The pulse was weak and small, not exceeding 68 beats in a minute. It was

directed to be removed after the expiration of thirty hours, and being attended to at the period mentioned, the vesication was complete without rupture of the cuticle.—*Lancet.*

Mr. Atkinson gives short notes of ten cases, the results of which we have thrown together in a tabular form, arranging the cases according to the frequency of the pulse.

	Age.	Disease.	P.	Blister.	Sinapism.
4 Infant	7 m.	Convulsion	rapid		2 min.
5 Child	18 m.	Pneumonia	170	15 min.	
1 J. C. M.	16	Typhus	150	15 min.	5 min.
7 Female	63	Influenza	130		10 min.
9 S. A.	19	Fever	130	5 hours	
8 Male	25	Bilious Fever	90	8 hours	
7 Female	63	Influenza	76		30 min.
10 M. C.	26	Chr. Rheum.	68	30 hours	
2 Male	18	Influenza	65		1½ to 2 hrs.
3 Male	62	Hemiplegia	62		2 hours

Prov. Med. and Surg. Journ., June 12, 1844.

20. *Savin in Menorrhagia.*—Some observations on the employment of the Juniperus Sabina in hemorrhage from the uterus have been made by M. Aran, from which it would seem to be occasionally a powerful agent in checking these discharges. Much has been said on the properties of savin, as an emmenagogue, and on the effects of this drug in causing abortion, and considerable difference of opinion as to its powers and mode of action would seem to exist amongst competent authorities, some of which have recently been referred to and quoted by Dr. Shapter, in this Journal. Several foreign authors, however, and among them, Wedekind, Gunther and Sauter, disregard altogether its supposed tendency to cause uterine hemorrhage, and on the contrary recommend its use in cases of this description.

M. Sauter says, that savin is one of the most powerful curative means, not only in menorrhagia, and other diseases in the non-parturient, designated by the terms atony, asthenia, debility, defect of contractility or cohesive force, but also in those hemorrhages which threaten abortion, occurring in pregnant women, who, from debility, have already had several miscarriages. He states that in these cases he has given the powder of savin, in doses of from 15 to 20 grains, three times a day, during three, four and five months, and that he has, in this manner, frequently succeeded in arresting the hemorrhage and preventing abortion, the infants being born healthy at the full period.

The following cases, among others, are mentioned by M. Aran:—

A worker in embroidery, aged 33, under the care of M. Gendrin, at the Hotel Dieu, had been recently delivered of a child, and since her confinement had suffered from attacks of menorrhagia returning at irregular intervals. She was much weakened and her general health had begun to deteriorate. The neck of the uterus was neither swollen nor painful; but a soft elastic circumscribed tumour could be felt projecting before the anterior fold of the vagina. Powdered savin was administered, and in two days the hemorrhage ceased, and the uterus was restored to its healthy condition.

A woman, aged 28, also a patient of M. Gendrin, had suffered from menorrhagia for eight months, almost continually, but without uterine disease. Savin was administered, and on the third day the hemorrhage was arrested. About six weeks afterwards it returned; the uterus was now somewhat swollen, and sensitive to the touch. She was bled from the arm and the savin again given. The hemorrhage immediately ceased.

A lady, of a bilious-sanguine temperament, and robust constitution, was attacked with menorrhagia after a fatiguing walk. The hemorrhage was neglected and had lasted for three days, when M. Aran was called in. He found her in bed, with the countenance excited, the mouth dry and complaining of urgent thirst, and of dragging pains in the hypogastric region, which was tender on

pressure; the hemorrhage still continuing, although not very copious. The horizontal position, cold to the hypogastrium, and a bleeding from the arm were ordered. The bleeding was followed by great relief, the menorrhagia was stopped, and the patient, thinking herself cured, returned to her avocation. The same evening the hemorrhage reappeared; bleeding could not be again had recourse to, and one gramme and a quarter of savin was immediately given in three doses. On the following day the menorrhagia had completely ceased; and, notwithstanding that the patient would not remain in bed, did not again appear.

A young married lady, a blonde and of lymphatic temperament, was attacked at the catamenial period with profuse hemorrhage, which continued for eight days. M. Aran found her with no symptoms of deranged health, with the exception that she was somewhat pale. Three doses of savin, of forty centigrammes each, were administered at intervals of two hours. The following day the hemorrhage had almost ceased, and another dose of the savin entirely put a stop to it.—*Ibid.*, from *Gaz. Méd. de Paris.*

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21. *Ossification and Obliteration of the Vena Portæ.* By Prof. Gintrac.—A man, forty-five years of age, an old retired soldier, but employed in teaching recruits, two years ago was treated for palpitations and difficult respiration, and abdominal dropsy. He was then only partially relieved; all his symptoms remaining more or less. On the 10th of June he was admitted into the Hospital St. André, when he presented the following symptoms:—Dyspnœa, increased on walking; strong tumultuous action of the heart, with distinct *bruit de soufflet* and slight *bruit de rapke* over the sternal region. Pulse calm, but full. Tongue dry, and red on the margins and tip, but covered on the centre with a brown fur. Abdomen distended, tympanitic in the centre, dull, and with distinct fluctuation at the sides. Gums bleeding, but not livid; epistaxis, thirst, anorexia, headache, &c. He died in a few days.

The cellular tissue was generally infiltrated with a serous fluid. The heart was large. The aorta, at its origin, and for nearly the half of its extent, had a mottled appearance, consisting of reddish spots, rounded white projecting spots of a cartilaginous consistence, and of others which had a pustular aspect. The peritoneal cavity, otherwise healthy in appearance, contained several pounds of liquid serum. The liver was pale or whitish, and irregularly wrinkled or mammillated on its surface. The gall-bladder contained a medium quantity of somewhat thickish yellow bile. The biliary ducts had a normal disposition. The *vena portæ*, above the junction of the splenic and superior mesenteric viens, was filled completely by an old clot which adhered to the inner membrane. The clot was solid, and of a pretty deep black colour. At the same part of the vein several osseous plates were observed several lines in diameter. They were placed between the inner and middle coats of the vein, but had but little adhesion to either. All the abdominal veins which ended in these vessels were gorged with blood, and were varicose.

Professor Gintrac attributed the ascites to the obliteration and ossification of the *vena portæ*, and considered that this case proved, that though obliteration of that vessel probably modified the secretion of the bile, it did not prevent it altogether, but that it materially interfered with the nutrition of the liver. The blood of the *vena portæ*, he hence infers, contributed to the nutrition of the liver, but is not indispensable to the secretion of bile.—*Ed. Med. & Surg. Journ.*, from *Journal de Méd. de Bordeaux*, Jan. 1844.

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22. *Succinate of Ammonia—a remedy for Delirium Tremens.*—M. Scharn has successfully employed the succinate of ammonia for the cure of delirium tremens. The most furious delirium is quieted by the remedy as if by magic, and the disease cured by it in a few hours without the aid of any other medicine.—*Journ. de Pharm.*, March, 1844.

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23. *Rupture of the Heart.*—Mr. Nason forwarded to the Birmingham Patholo-

gical Society a specimen of rupture of the heart. The ruptures, three in number, are situated in the middle of the anterior face of the left ventricle. The one above, the largest, extends downwards and outwards, has very irregular and ragged edges, and is capable of admitting the points of the first two fingers. The middle one is situated below the inner termination and on a level with the outer termination of the rupture just described; it is capable of admitting a goose-quill. Underneath these is situated the third rupture, which is large enough to admit the point of the middle finger; its edges also are ragged and irregular.

The parietes of the ventricle are soft and flabby, and very much thinned, especially anteriorly; the aortic valves healthy, but puckered; the lining membrane of the aorta studded with atheromatous deposit. The coronary arteries arise as usual; the descending branch of the left coronary, as it passes down along the line of the septum of the ventricles, towards the apex of the heart anteriorly, is obliterated by ossification; all the other branches of the coronary arteries are healthy. The right auricle, the tricuspid valves, and the right ventricle, are healthy.

Mr. Nason says, "The man was seventy-two years old, very lame from attacks of sciatica or chronic rheumatism of the hip-joint. About three years before his death, I saw him with inflamed and œdematous legs, which yielded to diuretic medicine. He never complained of any affection of the chest, or difficulty of breathing. The day before he died, he told his wife he felt pain in the left side of the thorax. The following day, about noon, he walked a few yards from the door, and dropped down and died in a moment. On a post-mortem examination, the viscera in the abdomen were healthy, as also those of the chest, with the exception of the heart. The pericardium was completely filled with black blood, partly coagulated. I fancy my fingers made the lower opening in drawing it out, so as to divide the vessels as high as I could. There is no doubt the upper opening was a rent, from the thin and softened state of the parts, and that it gave way at the moment of the man's death. Is it not rather strange to find disease of so extensive a nature without any striking symptoms during life?"—*Prov. Med. & Surg. Journ.*, Aug. 7, 1844.

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24. *Of the Nature and Treatment of Aphthæ.*—Next to the induration of the cellular tissue, the disease which carries off the greatest number of newly-born children in the foundling hospitals is thrush. Hitherto we have been entirely ignorant of the cause and nature of this serious disease. The greater number of pathologists saw in aphthæ only a pseudo-membranous production consecutive on an idiopathic inflammation. With others it was a symptomatic inflammation. Neither were medical men agreed as to its mode of transmission; some regarded it as contagious, while others formally denied that it was so. According to the researches of M. Gruby, thrush is produced by the development of a cryptogamic plant.

Aphthæ present themselves in the form of white masses, covering the whole of the mucous membrane of the mouth, and extending sometimes into the pharynx, œsophagus, stomach and small intestines. The commencement of the disease is characterized by small, conical, whitish elevations, twenty-five millimetres in diameter, dispersed over the mucous membrane of the mouth; these elevations soon increase in size, and extend rapidly in the form of a pseudo-membrane strongly adherent to the subjacent tissue, from two to three millimetres thick, and covering sometimes the whole extent of the alimentary canal. A portion of this substance, examined under the microscope, is found to be wholly composed of a collection of cryptogamic plants. The roots are implanted in the cellules of the epithelium; they are cylindrical, transparent, and about 1-480th of a millimetre in diameter; during the development they perforate the entire series of cellules which compose the epithelium, to arrive at the free surface of the mucous membrane. The stems, which spring from the surface of the epithelium, are equally transparent, are divided at certain distances by septa, and contain corpuscles in their interior; they are cylindrical, straight, about one-fourth of a millimetre in length, and 1-400th of a millimetre in width; the stems

are divided into branches, which are again subdivided, bifurcating at an acute angle. These branches are composed of very distinct oblong cellules, containing one, two or three round and transparent nuclei; their lateral parts have sporules here and there, and their ends especially have a great number. The diameter of these sporules is from 1-200th to 1-500th of a millimetre.

These cryptogamic plants have considerable analogy with the sporotrichium described by some botanists. As they are very fragile, they become detached by the movements of the organs lined by the mucous membrane, and becoming mingled with the food, are carried into the alimentary canal, of which they afterwards cover a considerable extent. Those children in whom this extension of disease takes place very largely, fall into marasmus, and soon die. As M. Gruby has constantly found in the white substance of aphthæ only these plants and the cellules of the epithelium, and never any production of inflammation, he deems himself authorized to conclude that thrush is nothing else than a cryptogamic plant vegetating on the living mucous membrane.

M. Trousseau employs the following collutory successfully in the treatment of thrush:—One gramme of hydrochloric acid, ten grammes of honey. He also recommends the following application:—Equal parts of finely-powdered borax and honey mixed together.—*Med. Times*, from *Bouchardat's Annuaire de Thérapeutique* for 1844.

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25. *On Pain of the Loins.*—By W. S. Oke, M. D., of Southampton.—Perhaps there is no symptom more commonly met with in practice than pain of the loins, which is usually and at once attributed to bile, gravel or rheumatism; but as it may be also derived from other causes left out in a hasty decision, I shall enumerate them, and endeavour to point out the symptoms by which each may be distinguished.

Pain of the loins may be derived from the muscles, from the liver, from the duodenum, from the kidneys, from the colon, from the uterus, from the aorta, from the spine, or from matter collected on the psoas muscle independent of spinal disease.

In order to arrive at its true cause, we must endeavour to ascertain what function is principally involved, which will at once lead us to it.

If the pain be rheumatic, it will be increased by pressure, and by the slightest action of the muscles affected. There will probably be also rheumatism in other parts of the body, the system will not evince much disorder, the urine will be high-coloured and deposit a lateritious sediment.

If derived from the hepatic function, the pain will shoot upwards along the splanchnic nerves to the scapulæ; the alvine evacuations will be either deficient in, or exuberant with, bile; or show a morbid quality of that secretion; the urine will have a bilious tinge; there may be congestion of the hæmorrhoidal veins; and the spirits will be depressed.

If from the duodenal function, three or four hours after a meal the pain will be aggravated, shooting through towards the right side of the abdomen and remaining till the food has passed into the jejunum. Dyspeptic symptoms will prevail, and there will frequently be painful pustules breaking out about the face. I have lately met with a case in which the boils were extremely annoying.

If from the kidneys, the pain will shoot down the course of the spermatic nerves towards the round ligament in the female and towards the testis in the male, which will often be retracted by the action of the spermatic nerves upon the cremaster muscle. There will be more or less irritation communicated to the mucous membrane of the bladder. The urine also will be diagnostic in this instance; it may deposit mucus, calculous matter, blood, pus or albumen, according to the nature of the case; or it may be otherwise morbid in its constitution.

If from the uterus, the pain of the back will arise either from disordered function or disease of that organ. In the former case the pain will be of a neuralgic character, will return in forcing paroxysms extending around the hips and hypogastric region, will be attended with hysteria, and often with increased quantity of the menstrual discharge. In the latter case the pain will be *constant* and

severe, extending along the anterior crural nerve half way down the thighs. There will be a thin, offensive discharge from the vagina. The countenance will be wan and sallow, exhibiting the wear and tear of organic lesion.

If from the colon, there will be constipation and inflation in the course of the bowel, or the fæcal discharges will be of small diameter, or there will be soreness of the intestine under pressure, especially at its ascending or descending portions, accompanied by mucus, or shreds of lymph in the form of boiled vermicelli, amongst the excretions.

If from arterial dilatation, an abnormal pulsation of the vessel involved—the aorta, for instance—may possibly be detected by auscultation in the incipient stage of the disease, *if such were suspected;* but in a large majority of cases such a cause may reasonably escape the attention of the ablest surgeon, from there being no tangible symptom that might lead him to suspect it; and even after the dilatation has considerably advanced, it may be sufficiently large to press upon and disturb the spermatic nerves, but not large enough to project and pulsate externally, and this may, at this stage, be confounded with disease of the renal function.

A few years ago I met with a case of this kind in a man of middle age. The pain had been constant and wearing, shooting from the loins down the course of the spermatic nerves, and for a considerable time was reasonably attributed to the renal function, especially as there had been constant disturbance of this function. At length the aneurismal sac began to approach the surface and then, of course, the cause became apparent.

If from disease of the spinal column, the pain will be aggravated by percussing the spinous processes at this part of the spine, or by suddenly striking the toes against an uneven surface. There will be involuntary action of the muscles, especially of the flexors of the legs, diminished temperature, abnormal feelings, and more or less loss of power of the lower limbs. Should there be at the same time any unnatural projection of the spinous processes, the disease will be confirmed.

If from a collection of matter upon the psoas muscle, unconnected with spinal disease, the pain will be continued, dull and deep-seated, extending from the loins down the psoæ, or in whatever direction the matter may have taken its course. The pain will be aggravated by flexing the thigh towards the abdomen, and there will be difficulty in walking; moreover, there will be marks of a strumous habit and more or less symptoms of hectic fever. Should any fluctuating tumour present at the groin, or at any other point where the matter may find its way out of the body, it will be conclusive as to the nature of the case.—*Prov. Med. Journ.*, Feb. 17, 1844.

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26. *On the Treatment of Articular Rheumatism, by Tincture of Colchicum, Nitre and Blood-letting.*—Dr. E. Monneret has made some interesting observations on these points of practice, which deserve the serious consideration of the profession. Having shown, in a preceding paper, that the sulphate of quinine had no title to rank as a therapeutical agent in rheumatism of efficacy superior to many others, he now proceeds to test the value of the articles indicated above.

Twenty-five patients were treated by the tincture of the colchicum root, eight by nitre, and nineteen by copious blood-letting.

The energy of the preparation of colchicum was first ascertained—it was very powerful. The greater number of the patients took from four to sixteen grammes (one drachm to four drachms) in the course of the twenty-four hours, in one, two, or four divided doses. No smaller dose than a drachm was ever administered, and several of the patients took it for seven, some for ten, and others for thirteen days. The medicine was not discontinued in any case until it was ascertained to have no effect upon the disease.

In eight of the patients, the diminution, or even total disappearance of the symptoms of rheumatism, coincided with the exhibition of the tincture of colchicum. The rheumatism in these cases was either of some days' duration, and was scarcely accompanied with febrile symptoms, and then ended in twelve or

fourteen days, or it was completely chronic. In either case the powerful revulsion produced by the tincture of colchicum on the bowels sufficed to suspend or to expel the disease: the improvement always coincided with the diarrhœa. In no case did the tincture of colchicum produce amendment or cure of rheumatism by any of those specific and occult properties which have been recognized in it by certain writers. In a few rare cases where its action was beneficial and rapid, it operated as a true drastic purgative. With regard to any complications which existed with the disease on the side of the heart, M. Monneret observes that it is scarcely needful for him to say that they were in nowise modified by the tincture of colchicum. If the effects of this medicine upon rheumatism, then, are nil in fact, which seems quite certain, it is much otherwise in so far as the abdominal viscera are concerned. Upon this point considerable difference of opinion appears to prevail: some say the colchicum occasions no intestinal disturbance, and that it does not purge; others maintain that it abates the pulse in force and frequency; and almost all unite in lauding its effects in rheumatism, &c. I have watched its influence in a sufficient number of instances, says M. Monneret, to have no hesitation in stating exactly what I have seen. In twenty-five patients to whom the tincture of colchicum was administered, I observed but a single order of phenomena at all referable to the gastro-intestinal system. The most remarkable among them were nausea and vomiting, diarrhœa, colic pains, and borborygmi, and the whole of these effects almost immediately followed the exhibition of the medicine in large doses, and for a certain time. In other instances, diarrhœa was the prevailing feature—there was little sickness or vomiting, but the alvine evacuations were copious and repeated. In a third and very small class the chief complaint was of nausea and vomiting without any purging.

The sickness supervened either immediately after taking the draught, or at some longer or shorter interval during the day or night. The discharges were almost always bilious, or evidently mixed with bile. The diarrhœa was generally in proportion to the dose; from one to two drachms of the tincture were followed by from two to twenty evacuations in the course of the twenty-four hours. The motions were mostly passed with acute suffering, violent colic pains in the bowels, tenesmus, and scalding of the anus. The matters passed were at first semi-fluid, but by and by they consisted in great part of a yellow and evidently bilious serum, in which floated a large quantity of whitish grains in form and colour like the ova of a fish's roe; there was also mixed with them a quantity of red matter like scrapings of meat, and some blood more or less mixed with mucus.

Vomiting was scarcely induced by a smaller dose of the tincture than from two to four drachms in a draught; it will not follow one drachm, two drachms, or even three drachms administered in a large quantity of tisan. Several elements enter into the consideration of the therapeutical effects of medicines: the dose, the mode of administration, and the intervals of repetition. The effects of remedies are signally different from those generally seen when they are given in large and closely repeated doses. Three drachms of tincture of colchicum in two doses, one close upon the other, produce effects which are not only more energetic, but also different from those generally witnessed.

It is obvious, therefore, that colchicum in tincture exerts its agency especially upon the bowels. Of what nature is this agency? The diarrhœa, the dysenterical character of the stools, the severe griping which follows its exhibition, do not continue as in cases in which the intestinal mucous membrane is truly inflamed; its effect is mainly to alter the secreting faculty of the intestines—the fluids habitually poured out are increased in quantity, and changed in quality.

Colchicum appears to have no effect upon the urinary secretion; and must, therefore, be rased from the number of diuretics.

Blood-letting.—In nineteen cases of acute articular rheumatism, desiring to ascertain the effects of a somewhat energetic antiphlogistic treatment, the patients were bled at least three times each in the course of the four first days, and cupping was further had recourse to around the affected joints, or to the region

of the heart: only in two of the cases were tartar emetic and digitalis exhibited simultaneously. The quantity of blood abstracted was considerable,—large; and the venesections were repeated at short intervals. The mean stay in hospital of the patients thus treated was fourteen days—about the same as when other plans of treatment were employed.

The effect of the blood-letting on the disease can always be judged of by the state of the pulse: if it becomes less frequent, and loses force and volume, and if the temperature of the surface at the same time declines, the disease will end; if the pulse continues frequent, the disease is not yet at its conclusion. Sometimes the pulse falls suddenly after the first or second bleeding and the disease appears about to be subdued; but it soon rises again to its old number, and matters go on as if there had been no prospect of amendment: the gradual and enduring fall of the pulse is the best sign of improvement; if it falls from six to twelve beats below its usual number, so much the better.

When the symptoms are not relieved by the blood-letting within the first four or five days of the invasion of the disease, it is vain persisting in the abstraction of blood; the practice then is only injurious; bellows murmurs are set up in the heart and great vessels, the surface becomes drenched in sweat, the sleep is disturbed, the pulse is rapid, and the pains, far from diminishing, flirt about from one joint to another, or remain obstinately fixed in those that were first attacked. The conclusion, on the whole, in regard to blood-letting is that in moderation it is useful, especially when practised early in the disease, within the first four days; after this, depletion by the lancet only reduces the patient, and renders his recovery more difficult.

Nitre.—Eight patients only were treated with nitre, and of the number one was affected with meningitis cerebro-spinalis, another with pneumonia. In all the rheumatism was recent and severe. The medicine was administered in doses of from eight to thirty grammes (two to seven and a half drachms) dissolved in tisan. Its influence appeared to be absolutely nil in the whole of the cases. The pains in the joints, the signs of endocarditis, underwent no kind of diminution under its influence. The pulse was not lowered, the febrile heat was not lessened by it. The quantity of urine passed in the twenty-four hours was not increased. In order to control the disease it was necessary, in every case, to have recourse to other means.—*Lond. Med. Gaz.*, May, 1844, from *Archives Générales*, March, 1844.

27. *Paralysis of the Œsophagus followed by Hemiplegia, cured by Electro-magnetism.*—We extract the following notice of a case of Dr. Shearman's, from an interesting summary by Mr. Law, of the Scientific Transactions of the Sheffield Medical Society, in the *Prov. Med. and Surg. Journ.*, (May 15, 1844.)

"The patient, a lady, was fifty-one years of age, and had suffered for some months from tic douloureux of the right inferior maxillary nerve. On January 31, 1841, she was suddenly seized with an extraordinary attack of vomiting. She fainted, and had loss of power over the arms when in the upright, but not when in the recumbent posture. On the evening of the 1st of February, she found it impossible to swallow any thing, and the sickness subsided. There were no symptoms of inflammatory action. Subsequently she had paralysis of the left side of the face, and of the right arm and leg. The patient became exceedingly feeble, and neither external nor internal stimulants had any effect. Dr. Shearman treated the case as he would have done if it had been one of palsy, succeeding a slight fit of apoplexy. Nothing could be introduced into the stomach except through the œsophagus tube. On the 25th of February, electro-magnetism was applied, with the sanction of Sir A. J. Knight, to the back of the neck and chest in the course of the œsophagus, to the left side of the face, and from the spine in the course of the nerves to the right arm and leg. This was done one hour at least three times a day for a month, and afterwards twice a day. The nutritious and stimulating injections into the stomach were continued until March 9th, when she could swallow so well that the œsophagus tube was unnecessary. Pretty good doses of quinine, and other stimulating

tonics, in the way of nourishment, were administered; and great attention was paid to the digestive organs. On the 26th of June she could walk up and down stairs tolerably well. From this time, the electro-magnetism was gradually discontinued. She got quite well, and is so at this moment.

"This is clearly a very rare case. While it was going on, Sir A. J. Knight and Dr. Shearman consulted all the authorities within their reach without obtaining any information respecting it. Dr. Shearman referred the case to Dr. Abercrombie, who acknowledged that he was quite at a loss with regard to the state of the spinal cord. There can be no doubt that in this case there was no structural disease. This seemed to be the general opinion of the society. With respect to treatment, the writer doubts whether the electro-magnetism is entitled to the credit of having effected the cure; or whether this should be attributed to the quinine, stimulating tonics, and the great attention which was paid to the digestive organs. Paralysis occasionally terminates favourably quite irrespectively of medical treatment, and the acknowledged obscurity in which the proximate cause, in the case under consideration, was involved, demands especial caution in assigning to each of the various means employed in the treatment, its due share of credit. It is by no means impossible, that the electro-magnetism, instead of having carried off the complaint, retarded the cure; and that this was ultimately accomplished by nature, assisted by the general treatment. Until a series of cases treated with, have been contrasted with a parallel series treated without electro-magnetism, it would be unphilosophical to pronounce a decided opinion on this principle as a curative agent in paralysis. Although the writer has employed electro-magnetism in a variety of cases, during the last twelve months, yet he has hardly been able to verify a single observation of any one of its numerous and zealous advocates. Dr. Shearman used either the negative or positive pole, as chance directed. Now Ritter asserts that the former diminishes, while the latter augments the powers of life, and J. D. Humphreys, medical galvanist, with Chas. Woodward and others, says that the positive pole exerts a salutary influence, by exhilarating the spirits, and infusing feelings of energy and strength; while the negative excites a sense of exhaustion and of irritation. These writers distinctly state that the only effect of the negative pole, if applied to the seat of a disease, would be to aggravate its worst symptoms. How are these opinions to be reconciled with Dr. Shearman's belief, that he had cured his patient by an indiscriminate use of the oxidating and deoxidating electricities?

"Dr. Wilkinson, Dr. Hodgkin, Mr. Ware and Mr. Carpue ascribe wonderful power to electro-magnetism in diseases affecting respiration, circulation, digestion and secretion. According to these gentlemen, there is hardly a complaint which it will not either cure or relieve; or an indication in therapeutics which it will not satisfactorily fulfil. The writer can reconcile the discrepancies between the statements of authors and his own experience only by supposing that the publications on this subject contain many errors. With respect, however, to the case under consideration, it is right to say the society generally agreed with Dr. Shearman, in ascribing the cure to electro-magnetism; and that Dr. Abercrombie speaks rather favourably of this agent."

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28. *Bronchocele.*—Dr. B. R. Morris calls attention to rheumatism as an occasional cause of goitre, and relates three cases of the disease which he attributes to that cause. In one of these cases a cure was effected by the use of half a drachm of hydriodate of potass in an ounce of soap liniment, rubbed into the tumour every night.—*L. and E. Month. J. Med. Sc.*, Aug., 1844.

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29. *Paralysis of the Organs of Sense after Scarlatina: Recovery under the use of Iron.* By Dr. Hoffman.—A healthy girl, nine years of age, whilst recovering from a trifling attack of scarlatina, and without assignable reason, was observed to be dull of hearing; by and by, to be blind, or to see very imperfectly; then to have lost all sense of taste, and finally, to be without smell; the common sensation and power of motion were unaffected. This state of affairs

continued in spite of every approved plan of treatment essayed under the eyes of the best practitioners in the neighbourhood: internal medicines of all kinds, baths, sinapisms, blisters, moxas, and animal magnetism (!) The child was now put upon a course of steel, and a little wine was ordered for her, and with such good effect that in three weeks she was again restored to perfect health.—*Lond. Med. Gaz.*, May, 1844, from *Casper's Wochens.*

30. *Abdominal Hydatids.*—Dr. Gairdner read to the Medico-Chirurgical Society of Edinburgh, May 1, a remarkable case of abdominal disease, in which he had twice withdrawn by paracentesis from the peritoneal cavity, a quantity of a glutinous substance, resembling, in colour and consistence, calf's foot jelly, and coagulating, like the albumen of eggs, by heat. Some of this matter Dr. G. had exhibited to the society in January, but in a comminuted state, in consequence of having passed through the canula, and the valves of the syringe adapted to it for suction. After the death of the patient in February last, it was ascertained that the whole abdomen was filled with similar matter, amounting in all to about twenty-four imperial pints, and that it consisted of rounded masses having very much the same outward appearance as the ordinary acephalocysts of Laennec, but differing from them in many important particulars. These remarkable parasites had invaded the textures of the liver and omentum, as well as of some of the other viscera. The right lobe of the liver was entirely destroyed by them; the left partially; the omentum converted into a dense and almost cartilaginous tumour, of large size and great thickness, in which many of the parasites were contained, and from which many of them hung pendulous. Dr. G., after detailing the facts of the case, gave a condensed account of the results of his inquiries into the literature of the subject. He found that extensive destruction of the liver by hydatids, was by no means uncommon, and that there was one or two recorded cases, and more especially a very remarkable one by Ruysch, in which the destruction of this organ appeared to have been equally extensive as in his own case. He had not been successful in finding any case in which the omentum had undergone a change of the same sort precisely with that which he had described. Finally, he had examined attentively all the systematic treatises on entozoa in general, or on hydatids in particular, which were accessible to him, besides a great number of pathological works and individual cases in which they were incidentally described, and he had not yet found a single description of a parasite possessing the same physiological and structural peculiarities. He was therefore of opinion that it was a rare one; and that, although it had, in all probability, been occasionally seen, its peculiarities had not yet been observed or described.

Structural and Physiological Peculiarities of the above Entozoon.—Mr. Goodsir read to the society an account of the structural and physiological peculiarities of the entozoon found in Dr. Gairdner's case, by Mr. Henry D. S. Goodsir. Mr. Goodsir, after quoting from his brother's paper, read to the Royal Society a description of the animal in question, explaining more particularly the structure of the parasite,—stated as its most distinctive peculiarity, the fact, that instead of being like the common acephalocyst, a simple animal, it might be regarded as being of a composite nature. It appeared to consist of several cells, having in their interior a glutinous matter contained in cellular tissue, connected together by a common membrane extending from the free surface of the peritoneum over the surface of the various cysts, and forming their pedicles. On the surface of this membrane, except on the part covering the globular cysts, there were seen numerous circular discs, around the margin of which were a series of stomata opening into tubes extending into the substance of the membrane. These Mr. Henry Goodsir regarded as being the nutritive organs of the animal. With regard to its reproduction, Mr. Goodsir remarked that this took place in two ways, one which respected the extension of the individual existing group, the other as regarded the propagation of the animal to uninfected tissues. This, like the common hydatid, did not enlarge from cellular development, but by simple expansion of the original germinal vesicle. As regards its propagation

to uninfected tissues, Mr. Goodsir stated, that he had been unable to trace the earlier process by which an ovum appeared in the healthy tissue, but he found that when this had occurred, the ovum enlarging makes its way like an abscess to the free surface of the organ, and bursts, leaving an orifice leading into a cavity of the tissue. The formation of these cavities gave to the peritoneum the honey-comb appearance observable in Dr. Gairdner's preparations. After the bursting of the sac, the animal is not discharged from the cavity, but remains attached by its common membrane to the base of the cavity, and then projects outwards elongating its outer membrane so as to form a pedicle.—*L. and E. Monthly Journ. Med. Sci.*, August, 1844.

31. *Hydrochlorate of Ammonia.*—In the medical treatment of pleurisy, and in subacute inflammation of the lungs, and congestions of the mucous membrane, Sir George Lefevre states that he has availed himself very satisfactorily of a German remedy, which is almost universally employed in such cases, the hydrochlorate of ammonia. In English practice it has generally been confined to external use, but by the Germans it is employed in a great variety of internal complaints, and occupies in part the place of the nitrate of potass. Its employment is confined to subacute affections, congestive states of the mucous membrane of the bronchia, and the chronic affections of the serous membrane; where inflammation runs very high the nitrates of potass and soda are preferred. Hydrochlorate of ammonia has no very decided action on the system, although it sometimes stimulates the kidneys; but it is considered to be deobstruent, and to unload the vessels gradually, so that convalescence is achieved without any critical evacuation. It relieves thirst, and the tongue gets unloaded under its use. It has certainly a decided action on the mucous membrane generally, and is useful in old coughs, accompanied by gastric derangement. The combination of hydrochlorate of ammonia, with tartarized antimony, is regarded by Sir George Lefevre as a valuable mode of administering this remedy. The following is the form usually employed:—

Hydrochlorate of ammonia, ...	1 drachm.
Extract of liquorice, ...	3 drachms.
Tartarized antimony, ...	2 grains.
Distilled water, ...	8 ounces.

A large tablespoonful of this mixture is administered every two hours. The antimony forms no inconsiderable part in the operation. When its nauseating effects have made sufficient impression upon the disease, it may be withdrawn, and the hydrochlorate continued by itself. In many cases the latter only is administered. Stomach coughs are greatly benefited by it; when the tongue is loaded, it cleans rapidly under its use. A variety of affections of the mucous membrane, sore throats, enlarged tonsils, relaxation of the uvula, &c., feel its influence.—*Thermal Comfort.*

32. *Strychnine in Chorea.*—Dr. Rougier has tried this powerful remedy in ten cases, and the result of his experience has enabled him to proportion the dose of this energetic medicine, in cases of this kind, with more precision and exactitude than have hitherto been obtained. His patients were chiefly young boys from six to sixteen years of age. The duration of the disorder varied between one month and four years; the longest duration of the treatment being two months, and the shortest six days. The whole of these cases were cured, one only suffering a relapse, and that yielded to a repetition of the treatment. Eight out of ten of these patients were treated by strychnine alone, the others took at the same time sedatives and camphor. The strychnine was always administered in pills, and very small doses. One remarkable phenomenon was observed in all cases, viz., an increase of the symptoms under the influence of the first doses of strychnine. The greater number experienced tetanic spasms, sometimes very alarming, but which yielded soon to the injection of a glass of cold water. After these first accidents the movements became more regular, and the disease dis-

appeared. Dr. Rougier has been led to conclude that, in order to obtain the specific action of strychnine on the complaint, it should be carried to the extent of producing a species of tetanus, or at least of augmenting, in a sensible degree, the energy of the involuntary movements. A relapse may be safely guarded against by continuing the medicine for a few days after the disappearance of the symptoms, in gradually diminished doses. The success obtained by M. Rougier is such as may encourage practitioners in a trial of this new treatment, but they should never lose sight of the fact that a medicine possessing such violent energy as strychnine, requires great vigilance on the part of the physician.—*Med. Times*, Aug. 31, 1844.

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33. *Pulmonary Gangrene.*—The principal results of M. Boudet's researches on this subject are these:—

1. Gangrene of the lungs appears to be more frequent in childhood than at any other period of life.

2. It is essentially of the same nature as those other forms of gangrene that are developed spontaneously, or under the influence of putrescent fever.

3. In the child, gangrene, when it affects the lung, is rarely limited to this organ; usually, several other parts of the body are similarly affected at the same time.

4. The lower and posterior parts of the lungs are most frequently the seat of the disease. We have often occasion to observe that it manifests a remarkable tendency to attack the adjacent organs: thus we not unfrequently find the mediastinum and the pleura, and sometimes the œsophagus also, involved in the destructive process. It may extend by the mere contact of the sphacelated matter, inducing gangrene in the parts with which it comes in contiguity.

5. Gangrene of the lungs may appear in three different forms: in distinct patches, in nuclei or circumscribed masses, and in a diffused and extensive superficies.

6. It may be circumscribed, and a cure may then be effected in the child as in the adult. In such circumstances, the gangrenous corruption becomes surrounded by an organized pseudo-membrane, so that, in course of time, it is perfectly isolated from the adjacent tissues.

7. Local causes—such as inflammation, the existence of tubercles, &c., do not seem to have any direct influence on the production of pulmonary gangrene.

8. Like other spontaneous gangrenes of childhood, this form seems to be always developed under the influence of causes which act on the entire system. Thus, an unsound constitution, shattered health, imperfect or unwholesome nourishment, &c., are observed to predispose to its occurrence. But the proximate cause of the disease is unquestionably a morbid alteration of the mass of blood, consecutive upon scurvy, measles, scarlet-fever, and such like maladies, and which is characterized during life by the appearance of purple spots on the surface, softening of the gums, hemorrhage from various parts, &c., and after death, by patches of ecchymosis, and sanguineous suffusion, and by the extreme fluidity or dissolved state of the blood. In a chemical point of view, this state of things is most probably the result of a diminution in the proportion of the fibrine, and an excess in that of the alkaline ingredients of the blood.

9. The usual symptoms of gangrene of the lungs are dulness on percussion over the affected part, resonance of the voice, mucous or gurgling râle, fætor of the breath, greenish colour of the sputa, and a peculiar expression of the features that cannot be well described by words.

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In reference to the treatment of this disease, M. Boudet makes the following remarks:—"It is almost always after measles or scarlet-fever that gangrene of the lungs has been observed to occur. Therefore, as a means of prevention, the first step to be taken should be to keep, as far as in our power, children from being exposed to the contagion of the disease. The children who may be affected with it, should be carefully separated and kept apart from the other inmates of an establishment, like that of the Hôpital des Enfans. Moreover, as it has been

shown by the most satisfactory researches, that the exanthemata in question are generally more severe and complicated in children that have not been vaccinated, I should most strongly urge upon all parents, as well as medical men, a more punctual attention to this most necessary precaution."

Whenever, during the progress of measles or scarlet-fever, there is observed any tendency to the occurrence of hemorrhage, or sponginess of the gums, or purpural eruption on the skin, the physician should diligently examine the state of the lungs; for it is in such a state of the system that pulmonary gangrene is generally developed. The patient should immediately be ordered the free use of a beverage made with lemon-juice or with sulphuric acid: the affected parts of the mouth should be touched with nitric or muriatic acid; acid and antiseptic gargles should be used frequently, and the body and limbs should be sponged with an aromatic acid lotion. Dr. Boudet assures us that he has seen, in the Salpetrière, many cases in the most advanced stage, and seemingly in a desperate condition, recover under the diligent employment of acid medicines, internally and externally administered. The acids serve to counteract the excessive alkalinity of the blood, while the cordials give tone to the system, and enable it to resist the tendency that exists to the loss of the fibrine. The application of a blister or a sinapism to the legs is often a useful adjuvant; and in many cases decoction of bark, with port-wine and other tonics, may be advantageously exhibited. Some physicians have spoken well of the use of the chlorurets, given internally as well as freely applied to the surface of the body and to the gums. As it is the lower and posterior part of the lungs that is generally affected, the position of the patient should be frequently altered, so that the seat of the disease may not always be in a depending position."—*Med. Chirurg. Rev.*, July, 1844, from *L'Experience.*

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34. *The Sanability of Phthisis. The Influence of Malaria.*—The sanability of pulmonary consumption is one of those subjects which must ever command the regard of every philanthropist, and still more of every physician.

This inquiry has gradually been forcing itself upon the attention of the profession since the days of Laennec. Since his time morbid anatomy has done much for its elucidation, although it is to pathology chiefly that we turn for a thorough explication of the truth. Another interesting source of information, however, is to be found in the geographical distribution of the complaint, and its statistics in regions presenting different medical constitutions. It is to this last source that M. de Crozant has directed attention in an interesting memoir now before us, in the May number of the *Journal de Médecine.*

The part of the country which has fallen under M. de Crozant's examination lies in the department of Nevers, more especially its northern portion, the district around Cosne, and the canton of Donzy, situate on the left bank of the Loire, where the Noain joins the mighty stream, about 100 miles south of Paris, and 30 to the north of Nevers.

The Noain, with a somewhat semicircular course, from its origin at Entrains to the town of Cosne, where it joins the Loire, makes a circuit of eight or ten leagues. But ill-confined within its banks, it overflows twice or thrice a year, and for leagues around converts the whole country into a vast marsh; which is, moreover, interspersed with brushwood and skirted with forests. Hence it is scarcely ever thoroughly dried, remains moist, and makes the villages from Entrains to Donzy, and especially those of Couloutre and Perroy, the most unhealthy of the whole department. The lower portion of the river has a greater fall; and the marshes almost disappear where it joins the Loire. The soil, too, in this locality, is chalky and dry, and the forests are more scanty and distant. The communes of Sully and Saint Quentin are situate here, and are much more healthy than those named above.

The effects of the malaria in these more marshy districts are most melancholy. Intermittents prevail throughout the year,—at particular seasons are peculiarly rife, and, in fact, are quite epidemic. Population here cannot maintain itself; and the rate of mortality far exceeds that of reproduction. Old

age is unknown; and most of the labourers are strangers attracted by the high rate of wages. The inhabitants, generally, both young and old, are pale, cachectic, dropsical, and become old before their time; their spleens are hypertrophied, their livers engorged; and scurvy and struma add their traits to the other squalid features of the picture. They are dull and indolent; and misery, the inevitable result of morbid health, attends them to the tomb. It is fever alone which produces all this languor and wasting, and scarcely another disease shows itself among them.

It is a fact that phthisis is here unknown. M. de Crozant has corresponded with Dr. Lizon, a skilful and well-informed physician, who is familiar with all the details of practice in the district, and who writes,—"Pulmonary consumption is exceedingly rare in our communes, (the canton of Donzy,) and during the twenty years I have practised in the country, I have not seen a single case in the commune of Couloutre." Throughout the extensive beat of this physician, the best employed in the district, and for the long period he has practised, he has only seen seven cases of phthisis, most of these having something peculiar in their origin and history, and two of them having been cured.

A few details will prove interesting. Of the seven cases, three occurred in Donzy itself, the chief town of the canton, containing between two and three thousand inhabitants. Of these three cases, one was a wool-carder; and his trade could not but influence the development of the complaint. The two others stood to him in the relationships of uncle and nephew; and these were the only invalids in the family. The other four belonged to the commune of Sully, which is much less affected by the malaria. Two of these were cured; and both resided on the banks of the stream;—the one was a miller. The other two, who died, resided in the most healthy part of the commune. To these seven cases M. de C. has added two which fell under his own observation, which was very extensive in the district;—both of these cases apparently were cured. He resided at Sully, saw a great many individuals labouring under intermittent fever, minutely examined the state of the lungs of all who applied to him for advice, and never, except in the cases specified, could discover the slightest indication of tubercular degeneration.

In descending the Noain, as already stated, the peculiar insalubrious character of the locality disappears; and, on reaching its *embouchure* in the Loire, at Cosne, the antagonism between intermittent and phthisis is much less discernible. Here phthisis frequently manifests itself, commingling with the fever, a fact which has been confirmed by Dr. Gambon, the chief physician of Cosne.

It is, therefore, only in the centre of the marshy district that the agency of the malaria should be investigated. In the commune of Couloutre, whose population amounts to 696 souls, Dr. Lizon, during the twenty years of his unremitting practice, had not seen a single case of phthisis. The commune of Perroy, which is contiguous to the preceding, and equally sickly, possesses the same immunity. It was after passing Donzy, following the course of the Noain, that he saw the seven cases already specified; and these all occurred in the same commune of Sully, with a population of 1500, a portion of whose surface forms quite a contrast to the swampy soil of the other: and, finally, upon arriving at Cosne, this complaint is sufficiently rife, and its exciting causes prevail over the influence of the malaria, which is now greatly weakened, and gradually disappears.

The four cases of the cure of phthisis, which have been observed out of the nine which manifested themselves in the environs of the marshy district, all occurred on the swampy margins of the Noain, in the commune of Sully-Latour, in circumstances which were far from promising such a happy result. As exhibiting the features of these cases, M. Crozant furnishes the particulars of all the four, and they appear in every way to vindicate their claim to be—we had almost said—desperate cases of this most fatal disorder. In illustration, we subjoin one of them.

"*Obs.* 4. In May, 1841, I was requested to visit a young lad, a miller by

trade, aged 18, who was declared by his physician to be labouring under a chest complaint; and to such a degree that he could not long survive. He was at death's door when I saw him, and it was easy to perceive that the diagnosis could not be doubtful.

"His mother was of a feeble constitution, and subject to cough; the father was healthy; he has since died, but of what disease I am ignorant. The lad himself, like all the children of the village of Sully, was emaciated and diminutive; and hardly appeared to have attained the age of 13. He had always been subject to cough, and was of a sickly habit, but this was attributed to the fever, and he was treated accordingly. At the same period of the preceding year he was confined to bed for a month by the same disease. From that time he never regained strength; and both during its course, and frequently since, he has had frequent severe attacks of hæmoptysis, with diarrhœa, and night sweats;—a troublesome cough, with abundant expectoration, never left him. From time to time he had attacks of fever towards evening, continued want of appetite, and great emaciation. Such are the symptoms which most attracted the attention of his parents.

"He had been confined to bed for three weeks previous to my visit. When I first saw him he was extremely emaciated; but this was easily accounted for by the continued and copious diarrhœa. His strength was completely exhausted; his voice was feeble and husky. He had want of appetite, bitter taste in mouth, but no pain in the bowels. The cough was frequent, occurring in fits; the expectoration purulent and solid, floating in a considerable quantity of frothy mucus. There was some crepitation under the left clavicle; posteriorly the sound was dull; but the respiration clear without *râle;* over the rest of the lung the respiration was noisy. Under the right clavicle there was strong cavernous respiration, with gurgling, and a very dull sound: the rest of the lung appeared to be healthy. I saw this patient five times during the two months I remained at Sully-Latour. I merely prescribed some trifling remedies for him, with the exception of a vomit, which I ordered, as he swallowed his expectoration from sheer weakness. I noticed no change on him during this period; and I left him in what I considered a desperate state, truly astonished that he should have survived so long.

"On my visit the following year, I was informed that my patient was on foot; that he had got rid both of his cough and expectoration, had a good appetite, and was again working in the mill. I was told he had been recommended to take *l'herbe à la forgure*, (the periwinkle, I believe,) that he had thriven under its use, and regained strength; the sweating and diarrhœa gradually diminished, and at last completely disappeared; he still continued to inhabit his damp abode, but the fever had not reappeared for the last eight or ten months. I congratulated the mother on the recovery of her son, persuaded, at that time, that she had converted a merely temporary amelioration into a complete cure. I did not wish to destroy the maternal delusion, and I did not see the lad himself.

"Last summer (1843) I did not fail, on my arrival, to inquire after the health of this lad. I was told he still continued well; and that he had gone to another mill. I hastened to see him. It was difficult to recognize in the strong and vigorous lad now before me, the diminutive-looking boy I had attended three years previously. He bore no external trace of the miserable state I had then seen him in. I found nothing on auscultation. The anterior and superior part of the right side of the chest was perhaps a little less prominent than that of the opposite side; and the respiratory murmur was somewhat fainter there than over the other parts of the thorax. He still continued the trade of a miller; travelled about the country collecting loads for the mill; carried sacks of grain on his back; was constantly exposed to all the vicissitudes of the weather, and enjoyed the most perfect health."

We close this notice with M. C.'s concluding remarks. "To what are we to attribute these cures? For myself, I cannot say. Active treatment there was none. As little was there any peculiar hygienic care or influence. All that I

can discover is, that the patients were affected within a marshy and sickly district, on the banks of the river, in the midst of low and swampy grounds."—*Lond. & Ed. Monthly Journ. Med. Sci.*, July, 1844, from *Journ. de Med.*, May, 1844.

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35. *Rupture of the Aorta at its junction with the Heart.* By W. Ryan. (*Lancet*, Feb. 17, 1844.)—The patient, a woman aged 60, died suddenly. There was a rupture at the junction of the aorta with the ventricle towards the right side. The rupture was somewhat oblique, and from the inside the handle of a scalpel could be passed into the pericardium. There was considerable hypertrophy of the heart, which was not much loaded with fat. No ossific deposits nor cause of obstruction to the circulation were found in the aorta. She had long complained much of "pain in the stomach," for which she had been under much ineffectual medical treatment.

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36. *Preservative influence of Vaccination—propriety of Revaccination.*—The degree of preservative influence exerted by vaccination, and the propriety of revaccination, continue still to be debated on the continent, especially at the Academy of Medicine at Paris, where M. Bousquet and M. Gauthier de Claubry take different sides of the question. M. Bousquet (*Bulletin de l'Acad. Royale de Médecine*, Oct. 15, 1842, and Sept. 30 and Oct. 15, 1843,) is of opinion that the vaccine virus becomes weakened by its transmission through numerous individuals, and appeals to the fact that the effects produced by the renovated vaccine virus in 1836 were much severer than those which followed vaccination with the old matter. It is, however, a singular fact that the difference between the vesicle produced by the new virus and that produced by the old is not perceptible till the sixth or seventh day, by which time the preservative power of vaccination has been exerted, as is shown by the circumstance that a second vaccination after that day does not produce any effect. Still the increased frequency of variolous and varioloid affections of late years, and the fact that the greater number of persons in whom small-pox occurs after vaccination are adults, induce M. Bousquet to believe that a weakening of the vaccine virus does result from its repeated transmission through different individuals, and that the preservative power of vaccination does not extend beyond a certain term of years, though its modifying power continues during the whole of life. He inclines, therefore, to the adoption of revaccination. M. G. de Claubry, (*Ib.*, Sept. 30, and Oct. and Nov. 1843,) on the other hand, insists on the absence of any ratio between the severity of the local effects of vaccination and its preservative power, and regards the symptoms which have followed vaccination practised direct from the cow merely as phenomena attending the naturalization of cow-pox in the human subject. When this has once been accomplished, the transmission of the virus through hundreds of individuals in no way impairs its virtues or modifies the character of the eruption which it occasions. In proof of this he mentions that in some places the same virus has been employed for twenty-five, thirty, or even forty years; and yet the character of the vaccine vesicle has continued unchanged during the whole time. No argument for revaccination can be drawn from the occurrence of secondary small-pox, since it occurs even in persons who have had variola once in the natural way; and M. G. de Claubry states, though on rather slender grounds, that this takes place in one of every sixty-three persons who have been attacked by the natural small-pox. He asserts, too, that varioloid eruptions were met with in the early days of vaccination as frequently as now, though their variolous nature was not then apprehended; and denies that such eruptions are by any means confined to adults. He finally endeavours to weaken the positive evidence in favour of revaccination, by showing that varicella, varioloid eruptions, and variola have occurred in the Prussian army among persons who had been revaccinated.

The results of recently-performed revaccination in the Prussian army, and in a district of Silesia, are contained in the *Med. Zeitung*, Jan. 18, and April 5, 1843.

Dr. Kahlert, of Prague, has made the experiment of passing vaccine lymph

from the human subject through the cow, with a view to increase its activity. This experiment, which is the same as M. Bousquet and Mr. Ceely performed, was quite successful. The retro-vaccine lymph thus obtained produced very characteristic vaccine vesicles in some children who were inoculated with it, but without causing any peculiarly severe constitutional disturbance. (*Oest. Med. Jahrbücher*, June, July and Aug., 1843.)—*Dr. C. West's Report on the Progress of Medicine.*

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

37. *Erysipelas—treatment with ointment of Nitrate of Silver.*—Erysipelas, the ambulant and stationary, both forms of frequent occurrence and often serious, are differently treated in the hospitals and in private practice. The method of Dupuytren, however, (flying blisters,) appears to be generally adopted, and its results are, in fact, sufficiently satisfactory. M. Jobert follows a different method which he finds is perfect. It consists in surrounding the erysipelatous surface with nitrate of silver ointment, and the phlogosis promptly disappears. The ointment is prepared of three degrees of strength:—the first contains four parts of the salt, the second eight, and the third twelve to thirty parts of lard. The parts selected are anointed with a small portion of the ointment, at distances of a few centimetres, each spot being of the size of a dollar, and then covered with blotting paper. A simple eruption results, but never an eschar. The medicine is absorbed, doubtless, and acts dynamically like cantharides. The antiphlogistic action of nitrate of silver is now perfectly established, and its beneficial effects in all phlogoses can no longer be doubted.—*Annales de Thérapeutique*, July, 1843.

38. *Fractures of the Limbs.*—It is remarkable that, since the two dominant methods, adopted, until late years, for the treatment of fractures of the lower limbs, have lost their powerful protectors—we allude to the inclined plane and the horizontal plane of Scultetus, adopted by Dupuytren and Boyer—each hospital has its own peculiar apparatus. At La Charité, fractures are dextrined, and the patients allowed to walk about; whilst, at the Hôtel Dieu, they are faithfully treated according to the traditions of the Academy of Surgery. At the Val-de Gracel fractures are encased [*emboités*,] whilst, at St. Louis, they are gaitered, &c.; and, what is remarkable, the success is everywhere nearly equal. The following is the method adopted by M. Jobert. This surgeon has renounced every kind of bandage of pad and splint, at least in simple fractures. Whether the fracture be of the thigh or leg, the neck of the femur, or the shaft of this bone, the tibia or fibula, the patient is put to bed, his limb is laid horizontally, as if uninjured; a buckskin gaiter, covering the foot and lower third of the leg, is applied; to the bottom of this gaiter are attached straps with buckles. The fracture is usually set, and the straps are buckled around the iron foot-bar of the bedstead. Extension and adaptation are effected by this means at the same time—and this is the whole dressing. The straps are to be shortened more or less the subsequent days. If the fracture is at any part of the arm or forearm, the patient is put to bed, a thick glove extending over the wrist, and with straps like the gaiter. The fracture is set, the straps buckled, and all is finished. No hoops. The cures are perfect.

As is perceived, we have to return at present to permanent extension in the treatment of fractures. The method of walking about and the immovable apparatus do not appear to make much progress. M. Lisfranc has remained nearly constant to the principles of Dupuytren; we say nearly, because this skilful practitioner has beneficially modified these principles. Extension appears to us to be really necessary only in fractures of the lower limbs. It is now ten years since we maintained, in a memoir published in the *Transactions Médicales*,

that the best method of applying this system was that which we had seen practised in the Hôtel Dieu, of Lyons, in 1828, which we had adopted in 1833 in a case of oblique fracture of the thigh—this mechanism was very similar to that devised by M. Jobert.—*Annales de Thérapeutique*, July, 1843.

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39. *Amputations—dressing after.*—M. Jobert, at the Hôpital St. Louis, performed two amputations in our presence, one of the leg near the ankle for an affection of the bones of the foot, the metacarpo-phalangean articulation for ulcerated spina ventosa. We mention them merely to draw attention to an important point relative to the dressing. This surgeon united the wound in both subjects with the hair-lip suture, which is very convenient, and perfectly fulfils the aim to obtain union by the first intention, so much desired by modern surgeons. The points of the pins are cut off with nippers. Short, tight bandages, artistically arranged, complete the approximation of the edges of the wound; a pad of lint, spread with cerate, was applied over the wound, afterwards charpie, compresses and a bandage. M. Jobert thus unites all bleeding wounds, and he obtains union by the first intention more surely than by the use of bandages alone. This method appears to be more expeditious and more certain than the interrupted suture which some justly celebrated surgeons recommend generally to be used. Another means which this surgeon resorts to, in order to obtain his object, is to tie the smallest vessels, and to wash well with cold water the parts before bringing them together.—*Annales de Thérapeutique*, July, 1843.

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40. *Observations on the recorded cases of Operation for the Removal of Ovarian Cysts.* By Benjamin Phillips, F. R. S.—The object of this paper is to bring together the results of these operations, for the purpose of determining whether the plan of treatment is to be regarded as a benefit to humanity or not.

Extirpation of ovarian cysts has been practised, as appears from the tabular arrangement of the cases, at least 69 times. In 50 cases, the tumour was extracted; in 14 cases, adhesions or other circumstances prevented its removal; in 5 instances no tumour was found.

Of the cases in which the operation was completed, the tumour being extracted, 30 terminated favourably, the patient recovered; in 20, the termination was unfavourable, the patient died. Of the 5 cases in which no tumour was discovered, all recovered. Of the 14 cases in which adhesions or other circumstances prevented the extraction of the tumour, 8 recovered, 6 died. The proper way, therefore, according to the author, of looking at this plan of treatment, is to observe the number of cases submitted to operation, and the number of recoveries after the removal of the tumour. He conceived this to be the fair way, because what has happened already may happen again. Adhesions may be too strong and extensive to make removal prudent; the tumour may be other than ovarian; or, it may be, that no tumour may be found. Regarded in this light, it appears that the operation has been undertaken 69 times, and that in 30 instances the patient has recovered after the extirpation of the tumour. It is true that 43 patients survived gastrotomy, but many of them were subjected to such a fearful operation, on the one hand without necessity, and on the other without being disembarrassed of the disease.

Two different plans have been followed in the operation, and it is proper to ascertain whether there has been a corresponding difference in the results. In the one plan, the incision of the abdominal parietes is sufficiently extensive to admit of the removal of the tumour entire; often extending from the ensiform cartilage to the pubes. In the other plan, the incision has had the extent necessary for the removal of so much of the tumour as would not escape through a puncture, or incision made in it before the extraction was attempted. If the tumour contains little or no solid matter, a puncture might cause the complete evacuation of the contents, and the cyst might be removed through a very small opening. The author thinks the evacuation before extraction, and not the exact length of the incision, the important distinction between the two operations.

The principle of extraction entire has been followed in 44 instances; the instances of successful removal by this plan amount to 18.

The cases in which the plan of procuring the evacuation of as much as was practicable of the contents of the tumour, before the extraction of the tumour was attempted, amount to 25; the instances of success to 12.

The evidence is then directed to the consideration of the following points:—

1st. Can we determine with certainty whether a tumour be ovarian or not? If not, have the failures been so frequent as to constitute a reason why the operation should not be attempted?

2d. Supposing a tumour to exist and to be ovarian, can we ascertain the nature of its contents as well as its connections? If not, have the failures been so many as to be an objection to the adoption of the operation at all?

3d. Are the results of this plan of treatment sufficiently favourable to justify us in preferring extirpation to any other mode of treating ovarian tumour? If so, what plan of treatment promises most success?

The general materials, together with the circumstance that the author has been present, either as principal or assistant, in six of the operations, have given him peculiar facilities for fairly considering these questions; and the conclusions he comes to are,—that we have not the means of determining with absolute certainty whether a tumour be an ovarian cyst or not, though we think the chances of error ought not to be so large as is represented by the tables; that we have no sure means of ascertaining the contents and connections of tumours presumed to be ovarian. After an elaborate consideration of the bearings of the third question, he says, the aspect in which the question should be ultimately regarded is this: the circumstances of the patient's case are so pressing that relief must be afforded, and as all other means have failed, it must be by an operation. Tapping is usually a successful operation, so far, at least, as to afford immediate relief, and in an ordinary case, the patient may reasonably expect to live four or five years, not in comfort, it is true, but requiring relief three or four times, as it may be, in a year. Extraction, though not a very painful, is a dangerous operation; the experience we possess justifies us in the expectation that, in at least 45 cases out of every 100 the tumour may be extracted, and life saved; but at the same time, it must not be concealed, that out of the 69 operations to which reference is made, 26 died, and that soon,—in fact, in a few days.

If the results already stated should be held to justify the performance of the operation of extraction, in cases of ovarian tumours, it is incumbent upon us to select the operation which is least perilous and painful to the patient. It must be borne in mind that the plan of making such an incision as will admit of the extraction entire, was employed in 44 cases, and that the recoveries, after extraction, amount to 18 cases. The plan of making such an incision as would admit of the extraction, where as much as possible of the contents of the tumour were removed, was followed in 25 cases, of which 12 recovered after extraction. The proportion of recoveries being in the one case 43 and in the other 48 per cent. The author's own experience is much more favourable, being 5 out of 6. It is evident, therefore, that the preponderance of success is in favour of what is termed the minor operation, that is to say, an operation in which the incision is as small as is consistent with the easy removal of the emptied cyst, provided it be large enough for the convenient application of the ligature around the pedicle. —*Lancet*, July 6, 1844.

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41. *Amputation at the Ankle Joint.* By James Syme, Esq.—It may seem a startling, but it is nevertheless a true statement, that amputation at the ankle-joint, with hardly any exceptions, may, and ought to supersede amputation of the leg below the knee. In order to establish this position, it is necessary to show, in the first place, that the stump which results from the former operation is fit for the duties required of it; and, secondly, that the patient may, under the various circumstances concerned, be relieved as effectually in the one way as the other.

The idea of amputating at the ankle-joint is not new, the operation having

been performed on the continent by different surgeons before I thought of it; and it would probably ere now have become generally adopted, but for the doubt that was entertained as to the ends of the bones being sufficiently covered to afford the patient a comfortable and useful support for the limb. For my own part, when I read of dissecting flaps of skin from the instep or sides of the foot, I felt so much distrust in the protection that could thus be effected against the injurious effects of pressure on a part so exposed to it, that I had no desire to try the experiment. But it occurred to me that by performing the operation in a different way all such objections might be obviated. This was to save a flap from the sole of the foot and thick integuments of the heel, by making a transverse incision, and dissecting these parts from the *os calcis*, so that the dense textures provided by nature for supporting the weight of the body, might be still employed for the same purpose. Two trials of this operation having proved satisfactory, I communicated them to the profession, and am glad to find that not only my colleagues in the hospital here, but also practitioners in other places have already acted upon this recommendation. The additional experience of my own practice now enables me to suggest some improvements in the mode of procedure—point out an error to be avoided—and verify the expectation formerly expressed as to amputation of the leg being hardly ever required.

The best instrument for performing the operation is a large bistoury or small amputating knife with a blade about four inches long. There is no occasion for a tourniquet, as the assistant has complete command of the vessels by grasping the ankle. In my first operations, the flap was made unnecessarily long; and I feel confident that the following directions may be trusted for exactly determining its proper extent. The incisions across the instep and sole of the foot should be curved, with the convexity forwards, and exactly opposite each other. A line drawn round the foot midway between the head of the fifth metatarsal bone and the malleolus externus will show their extent anteriorly, and they should meet a little way farther back, opposite the malleolar projections of the tibia and fibula. Care should be taken to avoid cutting the posterior tibial artery before it divides into the plantar branches, as in two cases where I did so there was partial sloughing of the flap. If the ankle-joint is sound, the malleolar processes should be removed by cutting pliers; but if the articulating surfaces of the tibia and fibula be diseased, a thin slice of these bones should be sawn off. The edges of the wound should be stitched together, and lightly dressed. When the cure is completed, the stump being conical in form, and having for its apex, or central point of pressure, the thick integument which covered the heel.

In proceeding to consider the circumstances in which this operation may be performed, it seems worthy of notice that, until a recent period, amputation of the leg was in this country generally resorted to for the removal of diseased bone, when the part affected extended upwards beyond the metatarsus. The operation of Chopart might frequently have accomplished all that was requisite, but unfortunately laboured under a prejudice which opposed its adoption. This was, that the extensors of the heel, being deprived of antagonizing action, would point the stump downwards, so as to render it useless as a support for the body. In 1829, for reasons elsewhere stated, (*Ed. Med. and Surg. Journ.*, Oct. 1829,) though there was no precedent for its performance in Edinburgh, I ventured upon this partial amputation of the foot, in a case where removal of the leg had been proposed, with perfect success, and without the slightest inconvenience of the kind anticipated. Encouraged by this result, I resolved to adopt the operation; and before long performed it six times with entire satisfaction. Since that time the operation has been established here, and regularly practised in cases admitting of its application.

Although the introduction of Chopart's operation considerably abridged the field for amputating the leg, there were still two situations in which caries frequently occurs, where it was beyond the reach of any partial removal of the foot. These were the joint between the astragalus and os calcis, and the ankle-joint itself. In the former of these situations, the diseased bone is so near the fibular side of the heel, that it is apt to seem within reach of the gouge or other

means of extirpation; and attempts have often been made to effect this, but seldom if ever with success, owing to the caries extending along the complicated articulating surfaces of the bones affected. I have succeeded in such a case, by making a fair breach through the foot from side to side, and passing a thick seton, which could be made the vehicle of red precipitate and other escharotics; but even this treatment cannot be depended upon, and its failure, in a case where I had ventured to indulge hopes of success, led me to think of contriving a method of amputating at the ankle-joint which might afford relief under such circumstances, and afford the patient a comfortable stump. In the case of John Wood, formerly related, (*Monthly Journal*, February, 1843,) the disease was thus situated, between the astragalus and os calcis. Soon after that case had terminated favourably, I met with another related in the same paper, where the ankle-joint itself was affected; and did not hesitate to repeat the operation. The gentleman who was the subject of it, though long in very indifferent health from other causes, now walks with ease and comfort.

Compound dislocation of the ankle-joint, either with or without that curious displacement of the astragalus which results from falling with great force on the heel, was formerly held to require amputation of the leg. The authority of Sir A. Cooper's experience encouraged attempts to preserve the limb in such cases; and in private practice both forms of the injury are now frequently conducted to a successful issue, though in general through a protracted process of recovery. But it must be admitted, that many lives have been lost, especially in hospitals, from trying to retain the limb. In the Royal Infirmary, I find that of 13 patients who had suffered compound dislocation of the ankle, and were not subjected to amputation, only 2 recovered; and even in the event of recovery, the foot generally remains in such a state of stiffness, weakness and sensibility of external impressions, as to be rather an incumbrance than a support to the patient. Now, all this danger, tedious confinement and permanent discomfort might be obviated by amputating the foot in the first instance. So long as the only alternatives were attempting to preserve the limb, and amputation of the leg, there was a strong inducement to abstain from operating. But if the patient's safety and speedy recovery may be insured by taking away merely that part of the limb which at the best can hardly be of any value either as to use or ornament, and at the same time producing a stump in all respects preferable to a shattered, stiff, irritable foot, I think there should be little hesitation in resorting to amputation at the ankle-joint under the circumstances in question.

[Professor S. gives the details of four cases, in which he amputated at the ankle-joint, and then goes on to observe,—]

It has now been ascertained that amputation at the ankle-joint may be performed so as to afford a stump in every respect convenient and comfortable, retaining the full use of the knee-joint, and enabling the patient to walk with perfect freedom. It has also been shown that by means of this operation caries of the upper range of the tarsus, of the joint between the os calcis and astragalus, and of the ankle-joint itself may be removed; while compound dislocation of the ankle, and destruction of the foot beyond the extent admitting of Chopart's operation, may also be remedied by it. But what other occasion besides this is there for amputating the leg? Malignant tumours of the tibia and fibula require amputation of the thigh, and compound fractures of the leg, so severe as to demand removal of the limb, hardly admit of the operation being performed below the knee, on account of the soft parts so near the seat of injury being unfit for healing action. The cases, therefore, if any, must be very few. In my own practice, since adopting amputation at the ankle-joint, I have removed only one leg below the knee, under very peculiar circumstances, which did not permit the milder measure to be adopted.

In conclusion, it may be remarked, that the advantages of amputation at the ankle-joint, as compared with amputation of the leg, are not limited to the smaller degree of mutilation and greater utility of the limb; since the operation is also attended with much less danger. This will appear when it is considered, 1st. How much less the shock must be, from the small extent of parts removed,

which is little more than in Chopart's partial section of the foot. 2d. That the smallness of the arteries divided prevents any risk of serious hemorrhage. 3d. That the cancellated texture of the bone exposed is not liable to exfoliate. 4th. That from the medullary canal remaining entire, inflammation of its contents and also of the veins is prevented.

In confirmation of these grounds for favourable expectations as to the diminution of danger, I am now able to add the proof of experience, since, in fourteen cases where the operation has been performed, eight in my own practice and six in that of others, there is not one fatal result.—*Lond. and Ed. Month. Journ. Med. Sci.*, Aug., 1844.

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42. *New method of operating in Hare-lip.*—However ably, says M. Malgaigne, the operation for hare-lip may be performed, there always remains on the median line, near the free margin of the lip, an ugly depression. Several methods have been proposed to remedy this imperfection in the operation, among which may be mentioned the operating by two curved incisions, but they have all failed in effecting the desired improvement. M. Malgaigne, therefore, proposes the following plan:—The paring is commenced from above, and carried downwards. It may be done by the scissors in the same way as the ordinary operation; only when the operator has arrived so low that but a small pedicle remains, he stops. The same plan is followed on the other side. Thus two small flaps are formed which merely adhere to the lip by their pedicle. After uniting with pins the two sides of the labial division in its entire length, except at the lower extremity, the small flaps are turned downwards and placed in juxtaposition. The surgeon having formed his opinion as to the length which they ought to retain in order to form a substitute for the natural median prominence, then shapes them as he thinks fit, conserving a greater or less portion, according to the extent of the deficiency which he has to supply. He then completes the reunion by uniting the two flaps by means of a suture or two, or a very fine insect-pin. If the pin or suture is placed very near the free edge of the lip, the cicatrix subsequently appears scarcely visible.

This operation has been twice performed; once by its author, a second time by M. Guersant. M. Malgaigne states that in his case the operation was perfectly successful. In M. Guersant's the median tubercle appears to have been rather too large. M. Huguier proposes to use the scalpel instead of the scissors. —*Lancet*, July 6, 1844, from *Journal de Chirurgie.*

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43. *Tubular Polypus of the Rectum.*—Mr. Elkington presented to the Birmingham Pathological Society, a specimen of tubular polypus of the rectum removed from a child fourteen months old. The patient had been ill three months; was frequently troubled with diarrhœa and vomiting, which were thought to arise from teething. When seen by Mr. E. on the eighth of March, there was a small substance hanging down from the rectum, about one inch in length. It had very much the appearance of the end of a lumbricus, the end being curved towards the perineum. On passing the finger into the rectum, it was found to be from two to three inches long, and attached to the right side, about two inches above the anus. It had only passed through the anus that day. The child was very pale and restless, and constantly vomiting and straining; the pulse quick and feeble. The next day, rather more of the substance was down, and slight prolapsus of the gut, which he returned.

March 10th.—About three inches of the intestine down, and the whole of the polypus external, its attachment being fully exposed. It was rather conical in shape, the apex being thinner than the base, or the part attached to the mucous membrane. Above its upper surface there was a deep sulcus, but by putting the membrane on the stretch, its attachment could be exposed both above and below. It felt tubular, and had something the appearance of the appendix cæcum. The child vomited frequently, was constantly straining, and each effort forced down more of the intestine; it was restless, and constantly tossing itself about; the pulse very feeble. The only chance of saving the child appeared to be the

removal of the polypus. Mr. E.'s brother tied a ligature round it, and then cut it off. He then returned the intestine, and applied a pad and bandage. Immediate relief was obtained; the sickness and straining abated, and the child gradually improved. In less than a week it was convalescent. The day after the operation there was slight prolapsus, but it was easily returned, and did not occur again.—*Prov. Med. and Surg. Journ.*, June 26, 1844.

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44. *Lipoma.*—Dr. Zappoli relates, in the *Bulletino delle Scienze Mediche*, for January, 1844, a case of lipoma, in which the tumour weighing twenty-eight pounds was attached to the upper cervical vertebræ. What was curious in this case was that the patient had an extremely voracious appetite, but, nevertheless, rapidly emaciated; and the extirpation of the tumour put an end to the excessive craving for food, and restored nutrition to its natural condition.

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45. *Surgical Treatment of Dropsies.*—In the second edition of his *Formulaire*, M. Bouchardat has published the formula of the solution used by M. Velpeau, in the treatment of hydrocele. The following is an extract from a work recently published by M. Velpeau on the surgical treatment of dropsies. He says, being desirous of ascertaining if the serous cavities could recover by means of iodine injections, as he supposed theoretically, he performed a series of experiments, which, as will be seen, have had a double result. He practised iodine injections into the peritoneal cavity of a dozen dogs. The peritoneum was selected as being the largest cavity of the economy, and consequently, if the effects of the injection in that case were not fatal, it could be practised everywhere else with impunity. The result of his experiments is that a very strong iodine injection into the peritoneum rapidly causes death, but if prepared with a very small quantity of iodine, the requisite proportion of which has been fully ascertained, it only occasions symptoms which are easily removed; and in no case either of the animals who have died from its use, or in those who were killed, has the inflammation manifested any tendency to suppuration. The animals that survived have taken food and drink from the third day, and were convalescent by the tenth. Adhesions have taken place most frequently between the intestines and the other viscera, without any being formed between the latter and the parietes of the abdomen. Glutinous and gelatiniform in the beginning, these adhesions are often found reduced to simple shreds, more and more supple and extensible the greater the distance of time after the injection. Having thus obtained the certitude that with the tincture of iodine introduced into the shut cavities, a merely adhesive and not purulent inflammation is induced, that when infiltrated in the tissues, it does not cause gangrene, that the adhesions which it causes are destroyed by the movements of the organs, and that the shut cavities may be restored after having been destroyed, M. Velpeau has thought himself authorized to apply the tincture of iodine to the treatment of a great number of cases of dropsy.

Desirous, however, of proceeding from the more simple to the more serious forms of the disease, he commenced with the most common form—that of hydrocele, in the treatment of which irritant injections had been already used. From that he tried it in encysted hydrocele, congenital hydrocele, hydrocele of woman, and, finally, in that of herniary sacs, in treating which practitioners did not dare to use the vinous injection. After these primary essays, he proceeded next to attack dropsies of the subcutaneous bursæ, and he thus used the tincture of iodine in the bursæ on the dorsum of the foot, around the ankles, in front of the patella, at the back of the knee-joint, in the popliteal space, in front of the head of the tibia, and even in the body of the thigh.

It being requisite, in order to obtain a cure of certain dropsies, to induce an attack of adhesive inflammation, but fearing the occurrence of suppuration, it became necessary to seek for a substance which should always excite the one without any fear of causing the other. A certain number or means of this kind were already used in practice, as regarded hydrocele. Wine, which has hitherto been found the most efficacious, succeeds very well, but, among others, it has

the serious inconvenience of causing gangrenous inflammation when it is infiltrated in the tissues. The fear of a similar consequence has naturally prevented surgeons from employing the vinous injection in other regions, or in larger serous cavities than that of the scrotum. M. Velpeau believes that the tincture of iodine diluted with water is a more appropriate application. Introduced through a puncture into the shut sacs, this liquid causes almost constantly the adhesion of the opposite parietes of the cavity which it touches. Infiltrated into the cellular tissue, it does not cause gangrene; of this fact M. Velpeau is assured by the result of numerous experiments; he has injected it under the skin and between the muscles of several animals—dogs and rabbits, for instance—and in no case did either serous inflammation or gangrene arise. At the end of four or five days there did not exist the slightest trace of pain in the part where the infiltration took place. As he has observed the same thing in man, after certain operations for hydrocele, he has no hesitation in saying that the tincture of iodine, diluted with a sufficient quantity of water, does not give rise to gangrenous inflammations when it is infiltrated into the tissues. Hygroma, nodus, and the hydatidiform tumours of the wrist, have been attacked in the same manner, and in no case has the injection produced serious consequences. Ganglionic and glandular dropsies, the voluminous cysts in the hollow of the armpit, the supra-clavicular region, the parotid region, and the sub-maxillary region, have yielded to this mode of treatment with more facility, perhaps, than dropsy of the scrotum. Similar tumours developed in the breast have by these means been caused to disappear in a week or two. A more serious malady—one less accessible to ordinary measures—the goitre, is also capable, in certain cases, of being submitted to the same mode of treatment. When the tumour contains a transparent or opaque liquid substance, it yields as readily as ordinary hydrocele to iodine injections. M. Velpeau has thus obtained a cure in six cases.

In all these cases there was no fear of being arrested in the use of irritant injections, either by the inconvenience which might result from the obliteration of a shut sac, or by the danger that might arise from excessive inflammation; the same, however, could not be said of the joints when affected with dropsy. However, having ascertained that the tendons around which the iodine had been injected, readily regained their mobility after the operation, encouraged by the facts already mentioned, and convinced that suppurative inflammation might be avoided, Velpeau applied the same plan of treatment as for hydrocele to certain diseases of the joints. As old, obstinate cases of hydrarthrosis, when combated unavailingly by the ordinary plan of treatment, sometimes terminate in a serious disease requiring the amputation of the limb, M. Velpeau considers the circumstances justified his adopting the operation in question. The experiments of a celebrated surgeon, M. Bonnet, of Lyons, which were carried on at the same time, have been performed on at least twenty patients. Those which Velpeau himself instituted have not produced such a frightful list of symptoms as practitioners have hitherto anticipated. A rather severe pain at the moment of injection, agitation, with insomnia and slight fever, and a moderate inflammatory swelling, lasted for some days; such are the immediate results of the operation. The resolution of the tumour is soon effected, and the movements of the limb, at first impeded, are speedily restored perfect in patients affected with simple hydrarthrosis; so that we are warranted in saying that dropsy of the articulations may be safely treated by iodine injections.

M. Velpeau, in conclusion, inquires if we may hope that certain varieties of spina bifida, of hydro-pericardium, of hydrothorax, and ascites, may also be cured by this plan of treatment? It would be rash, he says, to answer this question in the affirmative, without previous experience and direct observation; but he thinks the facts in his possession and analogy are sufficient to justify new experiments in that direction; and he adds, that iodine injections have succeeded with him equally well in purely liquid hæmatoceles as in hydrocele.—*Med. Times*, from *Bouchardat's Annuaire de Thérapeutique*, for 1844.

46. *Aneurism of Innominata treated by the simultaneous Ligature of the subclavian and right primitive Carotid Arteries.*—M. Rossi has applied simultaneously, ligatures to the subclavian and right primitive carotid arteries for an aneurism of the innominata. The patient lived six days after the operation; and the autopsy showed that the left carotid and right vertebral arteries were obliterated, so that, during the six days the patient lived after the operation, all the blood received by the brain was through the vertebral artery of the left side. —*Gaz. Méd. de Paris*, Jan. 27, 1844, from *Bulletino delle Scienze Mediche.*

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47. *Suppuration in the Maxillary Sinus—Evacuation of the matter by means of atmospheric air.*—Dr. A. Buchanan relates, in the *Lond. & Ed. Monthly Journ. Med. Sci.*, Dec. 1843, a case of suppuration in the maxillary sinus, in which he resorted to a very ingenious mode of evacuating the pus, and which may be usefully employed in other cases of suppuration in bony cavities. A tooth had been extracted, one of the fangs of which communicated with the antrum of Highmore, but the opening was so small that the matter would not flow out, and the patient, refusing to submit to the operation for the removal of the bottom of the maxillary cavity, Dr. B. resorted to the following process:—

"A blow-pipe was procured, having the necessary degree of curvature at its smaller end, and a bladder attached to the other end, which was inflated by the patient. The nozzle of the blow-pipe was then introduced into the orifice in the bottom of the maxillary cavity, when, on compressing the bladder, the air ascended to the top of the antrum, and forced the matter downwards into the mouth. By this means about one ounce and a half of fetid mattter was discharged; two ounces were collected, but probably at least half an ounce was saliva. The same operation was repeated morning and evening, and a small quantity of matter obtained for some time after."

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48. *Radical Cure of Hydrocele.*—The following operation for the radical cure of hydrocele is practised and recommended by Dr. W. H. Porter, the Professor of Surgery to the Royal College of Surgeons, Ireland:—

Dissatisfied with the results of the usual operation practised for the cure of hydrocele by injection, Dr. Porter was induced to make trial of other methods, and, after the experience of several years, has adopted the one the description of which we now proceed to quote. This operation is partly that by incision, the only difference being, that, instead of dividing the tunica vaginalis in the entire extent of the tumour, the incision extends only from an inch to an inch and a half in length, and partly that by the tent. Having first punctured the tumour in order to examine the state of the parts, and satisfy himself that it is a case in which an attempt to cure the disease radically may be safely made, or at least in which such attempt would be justifiable, Dr. Porter allows the sac to fill again. When the disease has reappeared, and the tunica vaginalis is as much distended as it previously had been, Dr. Porter performs the operation in the following manner:—The scrotum being shaved, an incision is made of the length above-mentioned down to the tunica vaginalis, and the part carefully examined to ascertain whether any vessel has been wounded which could possibly furnish a considerable quantity of blood. He then passes a bistoury into the tunica vaginalis at one extremity of the incision, out at the other, and divides it by a rapid withdrawal of the instrument; a tent of rolled lint, moistened with oil, and secured with a ligature, so as to be easily withdrawn, is introduced, and the operation is then completed, the patient being placed in bed. On the succeeding day Dr. Porter generally takes from ten to fourteen ounces of blood from the arm, especially if the scrotum is red and shows a tendency to inflammation. The tent is left to become loose, and drop out of itself, which usually takes place on the third or fourth day, and need not be replaced; but it is desirable to break up any adhesions that may be formed between the lips of the wound, and to introduce the finger occasionally into the cavity of the tunica vaginalis until the sixth, after which it may be treated with light superficial dressing, and the cure is generally perfect in about three weeks.

Dr. Porter informs us that he was at first in the habit of plunging the bistoury at once into the tumour, and completing the incision to the requisite extent, by making it cut its way outwards rapidly and at once. The objections to this method, however, are, that in some instances the fluid becomes extensively infiltrated in the cellular tissue, and in one case he found that considerable hemorrhage from the division of a tolerably-sized vessel in the scrotum took place into the sac, giving rise to severe and troublesome after-consequences.

The operation as now recommended is described to be scarcely more painful than the ordinary puncture by a trochar, and, if carefully performed, free from the possible occurrence of any untoward accident; it is decidedly more exempt than that by injection from inflammation and suppuration of the cavity, with all its unpleasant consequences, and the cure is perfected much more rapidly than by other modes of radical treatment.—*Prov. Med. Journ.*, July 24, from *Dub. Journ. Med. Sci.*

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49. *Necrosis in the Long Bones.*—Mr. W. S. Oke, in a paper on this subject, in the *Prov. Med. & Surg. Journ.*, July 24, 1844, remarks:—

"When, from whatever cause, a portion of the internal structure of a bone becomes disorganized, and loses its vitality, a curative process is at once set up by the surrounding sound parts, deep-seated, severe and continued pain is felt in the bone affected, depriving the sufferer of his rest, and making sad havoc with his general health.

"The surgeon examines the limb again and again, searching for some deep-seated abscess, but he finds none. Leeches, fomentations and cataplasms are applied without effecting any mitigation of the pain; and the only remedy which affords some degree of relief is repeated doses of laudanum.

"After a while the periosteum is thickened, and the shaft of the bone becomes sore under pressure, and enlarged by the deposit of new bony matter around the dead or disorganized part. At length a small abscess is felt under the integuments, which makes its way through them, and gives relief to the patient.

"Upon a careful examination the abscess is found to communicate through an opening in the new bone, which is like the perforation of a gimlet, with the cavity in which the sequestrum lies. If the blunt end of a probe be bent at an obtuse angle, and introduced through the perforation, we shall be enabled to ascertain the directions which the cavity takes; and by turning its blunt extremity upwards, supposing the limb to lie horizontally, we shall at once bring it into contact with the bony roof of the cavity, which is, in fact, the internal surface of the new bone.

"We are thus made acquainted with the true state of the case, viz., that disorganization had taken place in a portion of the internal structure of the bone; that suppuration had necessarily followed; and that the new bone, deposited around the dead portion, had been perforated in order first to evacuate the matter, and, secondly, the opening having been gradually enlarged, to allow of the sequestrum being thrown off.

"This is precisely what takes place in the soft parts, when there is loss of vitality in some portion of the subcutaneous cellular tissue. Here we have severe pain, throbbing, redness and thickening of the integuments, and suppuration beneath them, when, as it were, all at once a small opening takes place through the integuments, which discharges a fetid matter, and, gradually along with it, the sloughs of the tissue.

"Necrosis is more frequently met with in children and young persons; and the tibia is most commonly the seat of the disease. The other cylindrical bones are also sometimes similarly involved.

"In the treatment of these cases, the indication clearly is to enlarge the aperture, in order to remove the sequestrum. The sooner this is done the better. We shall be justified in doing it even before any natural opening has been formed, provided we are confident as to the nature and situation of the disease, upon the same principle that we are called upon to cut through aponeurotic texture for the outlet of pus confined beneath it; but if we are not sufficiently certain of our

diagnosis, (and this will generally be our position,) we are to wait till the bone has been naturally perforated—no longer, because, if we permit the disease to go on without enlarging the opening, the bone, from being constantly exposed to the matter accumulated in the cavity, will probably become more extensively disorganized, and the result will be, that instead of being able to remove the disease by one perforation of the trephine, we shall be under the necessity of making several more.

"As soon, then, as a cavity in the internal structure of a bone is discovered, for example, of the tibia, the limb being laid upon a pillow and firmly steadied at the knee and ankle, a conical incision is to be made through the orifice of the abscess down to the bone, and sufficiently long to allow the integuments to be dissected up, and the bone laid bare as far as the disease extends, which can generally be determined by the morbid condition of the periosteum, and by our exploration of the cavity below. If there be more than one aperture in the bone, the dissection is to be continued till the whole of them be fairly exposed.

"Should we find only one, and that leading to a transverse or very limited cavity, the removal of a single circle of bone might be sufficient, which is to be sawed out by a moderately-sized conical trephine, cutting at its side as well as at its extremity; but if the cavity be found to extend longitudinally down the shaft, or if there be several openings, then so many circles are to be sawed out as the extent of the disease shall require. The intervening bridges of bone may be removed by Hey's saw, or, what is better, they may be cut out by a small chisel, and the gentle stroke of a mallet.

"The cavity being freely exposed, the sequestrum, if loose, is to be removed at once; if not, it must be left to be disposed of by the natural process.

"If the cavity consist of carious bone, which will sometimes be the case, the diseased surface of the cavity should be cleared away by a sharp gouge, after the manner recommended by Mr. Hey.

"We shall occasionally find that the cavity contains a sequestrum, extending to a considerable length both above and below the aperture, which, therefore, cannot be extracted through it. Under these circumstances the sequestrum is to be cut across in the open space we have made, which will enable us to draw out first one end, then the other."

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50. *Compound Fracture of the Tibia during pregnancy.*—Mr. Hawkins, in a report in the *Prov. Med. & Surg. Journ.*, June 5, 1844, of surgical cases occurring in the Cheltenham Hospital, relates one of a compound fracture of the right leg, a little below its middle, in a woman thirty-six years of age, in the eighth month of pregnancy. The accident was occasioned by a sudden twist in getting out of bed. The fracture was very oblique, and nearly an inch of the tibia protruded through the wound. Reduction was, however, effected without difficulty, and the limb placed in a fracture-box. Five weeks from the receipt of the injury the bones had firmly united, and a few days afterwards the patient was delivered of a fine healthy female child.

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51. *Dissecting Aneurism of the Aorta, Innominata and Right Carotid Arteries.* By R. B. Todd, M. D.—A stout, plethoric man, æt. 37, was suddenly seized, while dining at a friend's house, with syncope, from which he soon recovered. His symptoms at this time were, violent pain in the loins, down the course of the ureters, thighs and abdomen, with some tympany and swelling of that region, nausea and scanty urine. Notwithstanding depletion, local and general, purging and diuretics, the kidneys ceased to act, and other signs showed themselves. He became paralytic of the left side: the pulse of the right side was distinctly smaller and weaker than that of the left: there was bellows sound in the course of the aorta and innominata, and the breathing in the right lung was less audible than that of the left. There was also great drowsiness and sluggishness, indicating oppressed brain.

About the fifth or sixth day the secretion of urine returned, but the cerebral symptoms showed but trifling signs of amendment. The pupils, which had

before been unequal, became equal, and some power returned to the paralyzed side; but the pulse began to falter, and signs of an internal hemorrhage manifested themselves, and on the eleventh day from his seizure he expired quite suddenly.

A copious effusion of blood was found in the pericardium; this had escaped through a little fissure in the outer coat of the aorta, which formed the external ovule of a recently formed aneurismal sac. This sac communicated with the aorta through a transverse rent in its inner and middle coats, which originated in an ulcerated ætheromatous spot. The blood which thus escaped from the artery made a new channel for itself along the aorta, and also along the innominata and right carotid arteries, by splitting the middle tunic of those vessels into two laminæ. The separation took place in the carotid, to some distance up the artery, and was then stopped, the consequence of which was the plugging up of that artery, and the cessation of the circulation in it.

The right hemisphere of the brain was exsanguineous, and all that part of it which is above the fissure of Sylvius (which is supplied with blood by the middle cerebral artery) exhibited numerous patches of softening without discoloration, affecting the white matter as well as the gray substance of many of the convolutions. This softening Dr. Todd attributed to the stoppage of the circulation in the right carotid artery, the vertebral not being able to render its full share of blood, owing to the diminished calibre of the innominata and subclavian. The kidneys were in the second stage of granular disease. The temporary cessation of the action of these organs was doubtless due to a temporary impediment to the full flow of blood to them. The paralysis and the somnolency were clearly to be attributed to the physical alteration in the right hemisphere of the brain.—*London Med. Gaz.*, June, 1844.

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52. *Crural Hernia successfully operated on after twenty-nine days strangulation.*—This operation was performed by M. Steinbrenner. The tumour was of a livid red colour, and there had been frequent vomitings, constipation, and griping pains during the whole period; the debility was extreme. When the loop of intestine was exposed, it appeared of a deep brown-red colour, without a trace of gangrene; and after being freed, was easily reduced. Two hours afterwards the bowels were relieved; the symptoms subsided, and a rapid cure was obtained.—*Journal des Connaissances Medico-Chirurg.*, Oct., 1843.

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53. *Contributions to the statistics of Tracheotomy.*—Dr. James Watson, physician to the Glasgow Royal Infirmary, relates, in the *Lond. and Ed. Monthly Journal of Medical Science*, three cases which recently occurred in the clinical wards under his charge, in which tracheotomy was performed. The propriety of this operation seems to be doubted by so many surgeons that it is extremely desirable to collect its actual results, as it is on such evidence only that this indecision can or should be removed.

The cases in question were three; in two of them the operation was perfectly successful, in the third the patient died. The patients were all adults, and their symptoms remarkably similar. Their disease was somewhat of the character of chronic laryngitis, but connected with syphilitic sore throat, and partaking latterly of a more acute character, involving the immediate safety of the patients, probably in consequence of cold. This complication with syphilis, affording the hope that much of the chronic constriction of the glottis might be occasioned and kept up by irritation extending from the ulcerated fauces without seriously implicating the respiratory apparatus farther down, was supposed to hold out a reasonable prospect of the operation not only prolonging the patient's life for a few days, but even of contributing towards the final and complete restoration of health.

In the fatal case Dr. Watson regrets that the operation had not been performed earlier. "Had this been done," he observes, "I have no doubt, from the state of the trachea, and even of the lungs, that the issue would have been equally successful as in the other two. The trachea was sound; and the con-

gested state of the lungs would in every likelihood have been got rid of, when the obstruction to the ready admission of the air was removed."

Dr. Watson concludes his paper with the following remarks:—

"1st. That it is important practitioners should bear in mind that, in syphilitic sore throat, the upper part of the larynx is apt to become the seat of disease as well as the fauces; and that hence the most grave consequences to the patient are to be dreaded. The progress towards such a state is generally slow, but may at any time be developed or accelerated by cold. A watchful care, therefore, ought to be exercised over patients whilst in this hazardous position; and if such an extension of the disease should take place, so as materially to impede respiration, thus placing the patient's life in danger, and speedy benefit be not derived from more ordinary curative means, the trachea ought to be opened, in the full assurance that, if done before the powers of life are not too far exhausted, a successful issue may be counted on.

"2dly. That even where, from neglect, or the opposition of the patient, the operation may have been imprudently delayed, we must not be too readily deterred from operating, by suspicions as to the state of the lungs, or the strength of the patient. In so far as the above cases go we are warranted in operating, even although appearances should be very unfavourable. In all of them, the dyspnœa had been great for weeks,—the threatening of suffocation for the last few days had been extreme,—and in two, the pulse was very quick, and the debility alarming. Yet two out of the three recovered without any bad symptoms, and in the third, the autopsy, as already remarked, discovered nothing to forbid the operation.

"3dly. In these and similar cases, it is unquestionably a most important circumstance, in reference to the propriety of operating, that the affection of the glottis is the consequence of an irritation descending from above. This circumstance places a clear line of demarcation, in point of prognosis, between such a class of ailments and those others in which occlusion of the rima glottidis is either subsequent to, or nearly simultaneous with, diseased states of the trachea and bronchi, as is not unfrequently, if not always, the state of matters in the ordinary chronic laryngitis of adults, and the acute laryngitis of young subjects, usually called croup. In such cases, the same success is not to be anticipated from bronchotomy. In ordinary chronic laryngitis, life, perhaps, may be prolonged, by the operation, for a few days or weeks, but this disease seldom exists without incurable derangements of the bronchi and lungs accompanying, if not preceding, and altogether irrespective, in their origin and progress, of the constriction of the glottis. And as there can be no change of circumstances effected by the operation calculated to arrest or remove states not dependent on such constriction, so it must happen that surgical interference can do nothing more than very triflingly postpone, if by its shock it do not actually hurry, the otherwise inevitable fate of the patient.

"Neither can I see any thing in bronchotomy calculated to benefit the patient in common croup. This is not a disease of the rima glottidis merely, but when at all severe, nearly simultaneously of the trachea and bronchi to their minutest ramifications. No doubt, from the smallness of the rima, and, indeed, of the whole trachea in children, the suffocative symptoms are the most striking, but the disease would be quite competent to kill, if we could suppose such a case, although the rima were not at all obstructed, from the immense extent of the inflammatory irritation, and the barrier presented by the false membrane to the due oxygenation of the blood. And although convalescence in some cases is connected with the expulsion of this false membrane, yet this event is rather the consequence of a return of the bronchial surface to a healthy state than a cause. The powers of the constitution or judicious treatment may have affected this amelioration; and whether the operation were performed or not, the issue would have been the same. The membrane, if disengaged from the bronchial surface, would be easily expelled; if not disengaged, the operation could do nothing towards facilitating this expulsion, and even little towards admitting the air into the bronchi, at least so as to act beneficially on the system. I am afraid, in

most cases of this description, I would almost say in all, the operation can only add a frightful and most annoying aggravation to the suffering of the little patients. I have now been party to three or four operations in cases of common chronic laryngitis and croup. The patients all died, and I am persuaded that it would be well were the profession to repudiate bronchotomy in these diseases, especially in the latter. Its being mooted at all as a possible means of giving relief, places the whole parties concerned in a most unpleasant attitude, viz., of hesitation between a desire to leave nothing undone, and a resorting, on the merest chance of benefit, to an operation which, in nineteen cases out of twenty, will do harm, by increasing the bronchial irritation,—not in one case in a hundred will it ever do good, and the want of success in such unsuitable cases, prevents its adoption in others where the probability of its being of use might be greater.

"4thly. Were I making an exception to the above general rule, it would be in respect of laryngitis in young subjects, consequent on diphtheritic affections of the fauces, and in scarlatina anginosa. I look upon such cases as in some respects resembling those which are the subject of our present remarks, more especially in the important particular of the glottis being affected in consequence of an extension of the disease from above, and the probability being great that the affection of that part, although sufficiently severe to implicate the immediate safety of the patient, might not be accompanied by an equal amount of disease in the trachea or bronchi:—thus differing from common croup, where, in urgent cases, the whole lining membrane of the larynx, trachea and bronchi, is nearly simultaneously and equally affected. I only recollect one case, however, in which this operation was performed in such circumstances. It occurred to me, so long ago as June, 1821, but, though the interesting nature of the case was sufficient to impress its circumstances deeply on my recollection,—its having been the occasion of suggesting to my mind a mode of treatment, in such diseases, which has since, in my own hands and in those of many others, done much good, has contributed to fix it still more deeply. It was a fine boy of about eleven or twelve years of age. He had this diphtheritic affection of the fauces, and it spread to the glottis. The distress was so great that tracheotomy was performed. He was greatly relieved by the operation, and lived after it ten days, when he died very unexpectedly, after giving good hope of a complete recovery. Erysipelas seized the wound and its neighbourhood, from which he almost immediately sank. On reflecting on this case, after the patient's death, it struck me that caustic applied to the diphtheritic spots on their first appearance, might have cured them, or checked the tendency of the diseased state of the mucous lining of the fauces to spread, and as the solid caustic would have been inconvenient, from the irregularity of the surface to which it required to be applied, I naturally concluded that this would have been easily effected by dissolving the caustic and applying it by means of a small brush. So far as I know, this was the first time this simple and obvious remedy was thought of in such cases. I henceforth used it myself wherever it was indicated, and recommended it to all my medical friends. Since then it has come into common use, and I believe has cut short many such affections, and by preventing extension to the larynx, removed the necessity of having recourse to tracheotomy. Where, however, such an extension does occur as I have already mentioned, I think this operation holds out much hope, not only of warding off immediate dissolution, but of contributing to an ultimate cure. The inflamed glottis is allowed to rest from the forcible attempts to respire through an insufficient aperture,—the system is delivered from the depreciation of all its functions, caused by imperfect æration of the blood,—time is allowed for the application of suitable remedies to the mucous lining of the fauces, and judging from analogy, any existing affection of the lungs, being only consequent on the disturbed state of the parts above, is likely to subside with the removal of the exciting cause, the patient's restoration to health becoming highly probable.

"5thly and lastly. The rapidity of the convalescence of the successful cases deserves notice. In a month, Esplin was dismissed cured; and Mary Campbell,

although the removal of the tube would have been imprudent, could breathe and speak tolerably by the glottis, and the ulcerations of the tonsils and soft palate were cicatrized. Yet in both these cases the affection of the throat was of six months' duration, the ulceration extensive, and the occlusion of the glottis extreme. No doubt this rapid restoration, for it was too rapid to be the result of the medical treatment, was greatly owing to the parts being relieved from the incessant coughing, straining for breath, and retching to clear the glottis from obstructing mucus, incident to the state of the patients before the operation; but also, and I have no question, mainly in regard of the ulcerations, from the constitution being delivered from the pernicious effects of the state of slow asphyxia to which these individuals were subjected from these unfortunate circumstances."

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54. *Danger of allowing a Catheter to remain for a long time in the Bladder.*—Scarcely a year passed that Dupuytren had not occasion to exhibit to his numerous pupils one or two examples of perforation of the bladder and fatal effusion of urine, resulting from a gum-elastic catheter allowed to remain permanently in that organ. Dr. Rognetta has twice witnessed the autopsies on such occasions. If the catheter is too long, or introduced too far, or certain dynamic conditions exist in the tissues of the organs, the beak of the instrument presses on the posterior parietes of the bladder, an eschar is produced, followed by an opening through which the urine flows into the peritoneal cavity.—*Annales de Thérapeutique*, July, 1843.

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55. *On Lithotomy.* By B. B. Cooper.—Almost every surgeon of repute has some peculiar mode of his own for the removal of a calculus from the bladder. The organ has been attacked at all approachable points, and by every variety of instruments, from the most simple to the most complex. It signifies but little what kind of instruments are used, providing they are directed by the hand of a skilful anatomist, who possesses judgment sufficient to enable him to vary his steps according to the nature of the difficulties which may exist in any case. After considerable experience, I can express my preference to the straight staff, but it must be in the hands of one who understands how to benefit by the advantages it affords.

The steps of the operation of lithotomy may be divided into four:—1st. To lay open the perineum; 2d. To lay open the pelvis; 3d. To lay open the bladder; 4th, To extract a stone.

In the first of these steps, if the straight staff be used, it must be recollected that it cannot be brought to a right angle with an horizontal line, as the curved instrument can, but only to the angle of 45°, beyond which it should not be attempted to be raised, as its point is liable to be drawn out of the bladder. Nothing untoward can occur during the performance of this step, unless from an unusual size of the superficial perineal artery or one of its branches, which may be required to be secured with a ligature. The principal point to be observed in the second step, is the opening the urethra at its membranous part, avoiding, as much as possible, the bulb and its large artery. It is in this incision the surgeon may wound the rectum, but which may be always avoided by the oblique direction of the incision towards the tuberosity of the ischium, as well as by the precaution of having the bowel perfectly emptied of its contents. Notwithstanding every precaution, the artery of the bulb is sometimes wounded, and is not easily secured, on account of its death and tendency to retract. Mr. Travers in such a case arrested the hemorrhage by making a piece of cork press on the internal pudic artery over the spinous process of the ischium. In this step, the depth of the parts appears much greater when the straight staff is preferred to the curved; but this apparent difficulty is really an advantage, as the artery is not so much pressed forward in the way of the knife.

The parts divided in the third section consist of the urethra, prostate gland, and the fibres of Wilson's muscle on the left side. The principal point to be attended to in this step is, not completely to divide the left lobe of the prostate

gland, for if its fascial covering be cut through, urine is sure to escape into the cavity of the pelvis, which is the most frequent cause of death after lithotomy.

The fourth step of the operation is the introduction of the forceps, and the removal of the stone; in effecting this object, numerous difficulties may present themselves, from the position, size, form and composition of the stone,—each of which can only be overcome by the surgeon's judgment and *tact*. The great source of danger, in this operation, arises from too free an incision through the prostate gland, giving rise to extravasation of urine into the cavity of the pelvis; the propriety, therefore, of making a small opening with the knife or any other cutting instrument, through the prostate, is very manifest. When the surgeon has cause to suspect that the stone is too large to be removed by the incision of the lateral operation, he should be prepared with instruments to break it into two or three pieces, so that he may not be under the painful necessity of submitting his patient to the objectionable operation, *à deux temps*.

The operation of lithotomy sometimes requires to be repeated, although every caution has been exercised to ensure the removal of all trace of the first calculus. The late Sir A. Cooper more than once operated a second, if not a third time. I have myself performed the operation three times on the same individual, in a period somewhat short of four years; he is still alive, and has been free of any complaint since the date of the last operation, (a period of twelve years.) Some lithotomists think that the incision should be made on the right side of the perineum in second operations, but this I consider to be both unnecessary and inconvenient.

Patients should not be kept on very spare diet after the operation; it must never be forgotten that the constitutional vigour cannot be diminished without increasing the irritability of the system. I am quite sure that one of the greatest modern improvements in the treatment of patients who have undergone surgical operations, is with respect to the better diet which is early prescribed; and hence, I believe, the greater comparative success of operations in this beyond that of any other country.—*Guy's Hospital Reports*, Oct., 1843.

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56. *Fibrous Tumours of the Mammæ.*—In the early part of last January, M. Cruveilhier read before the French Academy of Medicine, a memoir on fibrous tumours of the mammæ, which contained views so contrary to the current opinions of the day, as to have given rise to a very warm and lengthened discussion, in which the most distinguished members of the above-named learned body took part. We take from a late number of the *Lancet*, the following translation of the report of the memoir and of the debate.

M. Cruveilhier commenced by stating that in the memoir which he was about to read, he should endeavour to prove that the breasts were very frequently the seat of fibrous tumours, although their existence in this region was not noticed by Sir Astley Cooper or by Boyer, in their treatises on the diseases of the mammæ; that these fibrous tumours never degenerated; and that, being a purely local affection, they did not form again when once extirpated, so that their extirpation was not *necessarily* indicated.

Fibrous bodies, says M. Cruveilhier, were confounded with various other abnormal organic productions, under the names of scirrhus, cancers, polypi, until the researches in pathological anatomy were made which signalize the commencement of this century. Fibrous bodies of the uterus were first accurately described by Bayle, but he fell into the error of considering fibrous growths as confined to the uterus. Fibrous tumours may be formed in two ways; they may either spring from membranous surface, such as the periosteum of the nasal fossæ, or they may originate in the centre of an organ, such as the uterus, the mammæ, the ovaries, or the testicles.

Fibrous bodies are generally spheroidal; their surface is sometimes regular, sometimes mamillary or lobulated. Their volume is variable. With the exception of those which rise from a membranous surface, they only adhere to the tissues in the midst of which they develop themselves by loose cellular tissue, so that they are easily enucleated. The density of the tissue of which they are

although the removal of the tube would have been imprudent, could breathe and speak tolerably by the glottis, and the ulcerations of the tonsils and soft palate were cicatrized. Yet in both these cases the affection of the throat was of six months' duration, the ulceration extensive, and the occlusion of the glottis extreme. No doubt this rapid restoration, for it was too rapid to be the result of the medical treatment, was greatly owing to the parts being relieved from the incessant coughing, straining for breath, and retching to clear the glottis from obstructing mucus, incident to the state of the patients before the operation; but also, and I have no question, mainly in regard of the ulcerations, from the constitution being delivered from the pernicious effects of the state of slow asphyxia to which these individuals were subjected from these unfortunate circumstances."

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The parts divided in the third section consist of the urethra, prostate gland, and the fibres of Wilson's muscle on the left side. The principal point to be attended to in this step is, not completely to divide the left lobe of the prostate

gland, for if its fascial covering be cut through, urine is sure to escape into the cavity of the pelvis, which is the most frequent cause of death after lithotomy.

The fourth step of the operation is the introduction of the forceps, and the removal of the stone; in effecting this object, numerous difficulties may present themselves, from the position, size, form and composition of the stone,—each of which can only be overcome by the surgeon's judgment and *tact*. The great source of danger, in this operation, arises from too free an incision through the prostate gland, giving rise to extravasation of urine into the cavity of the pelvis; the propriety, therefore, of making a small opening with the knife or any other cutting instrument, through the prostate, is very manifest. When the surgeon has cause to suspect that the stone is too large to be removed by the incision of the lateral operation, he should be prepared with instruments to break it into two or three pieces, so that he may not be under the painful necessity of submitting his patient to the objectionable operation, *à deux temps*.

The operation of lithotomy sometimes requires to be repeated, although every caution has been exercised to ensure the removal of all trace of the first calculus. The late Sir A. Cooper more than once operated a second, if not a third time. I have myself performed the operation three times on the same individual, in a period somewhat short of four years; he is still alive, and has been free of any complaint since the date of the last operation, (a period of twelve years.) Some lithotomists think that the incision should be made on the right side of the perineum in second operations, but this I consider to be both unnecessary and inconvenient.

Patients should not be kept on very spare diet after the operation; it must never be forgotten that the constitutional vigour cannot be diminished without increasing the irritability of the system. I am quite sure that one of the greatest modern improvements in the treatment of patients who have undergone surgical operations, is with respect to the better diet which is early prescribed; and hence, I believe, the greater comparative success of operations in this beyond that of any other country.—*Guy's Hospital Reports*, Oct., 1843.

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56. *Fibrous Tumours of the Mammæ.*—In the early part of last January, M. Cruveilhier read before the French Academy of Medicine, a memoir on fibrous tumours of the mammæ, which contained views so contrary to the current opinions of the day, as to have given rise to a very warm and lengthened discussion, in which the most distinguished members of the above-named learned body took part. We take from a late number of the *Lancet*, the following translation of the report of the memoir and of the debate.

M. Cruveilhier commenced by stating that in the memoir which he was about to read, he should endeavour to prove that the breasts were very frequently the seat of fibrous tumours, although their existence in this region was not noticed by Sir Astley Cooper or by Boyer, in their treatises on the diseases of the mammæ; that these fibrous tumours never degenerated; and that, being a purely local affection, they did not form again when once extirpated, so that their extirpation was not *necessarily* indicated.

Fibrous bodies, says M. Cruveilhier, were confounded with various other abnormal organic productions, under the names of scirrhus, cancers, polypi, until the researches in pathological anatomy were made which signalize the commencement of this century. Fibrous bodies of the uterus were first accurately described by Bayle, but he fell into the error of considering fibrous growths as confined to the uterus. Fibrous tumours may be formed in two ways; they may either spring from membranous surface, such as the periosteum of the nasal fossæ, or they may originate in the centre of an organ, such as the uterus, the mammæ, the ovaries, or the testicles.

Fibrous bodies are generally spheroidal; their surface is sometimes regular, sometimes mamillary or lobulated. Their volume is variable. With the exception of those which rise from a membranous surface, they only adhere to the tissues in the midst of which they develop themselves by loose cellular tissue, so that they are easily enucleated. The density of the tissue of which they are

formed is very great, indeed, it is nearly of a cartilaginous texture, being composed of albugineous particles linearly disposed, strongly pressed against one another, interwoven in various directions, and often divided into several groups in such a manner as to constitute distinct lobuli. These fibrous formations possess veins, which originate in their centre by very small veinules, the trunks creeping on the service. No arterial vessel, no lymphatic or nerve, can be traced in their proper tissue. Fibrous bodies, therefore, present no other organic element than fibrous tissue animated by veins. Their life is thus reduced to obscure nutrition, the agent of which is venous blood agitated by an oscillatory motion necessarily very slight.

From the first period of their existence, fibrous tumours offer the characters which they will offer when fully developed. A fibrous tumour of the size of a cherry presents the same density of structure that we observe in one of the size of the fist or of the head. Sometimes these tumours are of a cartilaginous or osseous character from their origin.

Fibrous bodies only inconvenience by their volume and their weight; they are inoffensive parasites, which merely slightly modify the circulation and nutrition of the surrounding tissues. They are not themselves susceptible of many consecutive changes. They may increase indefinitely, remain stationary, or even undergo a kind of atrophy. They may become crusted with or penetrated by calcareous matter; they may also become the seat of œdema, in which case the tumour is often penetrated by a fluid resembling synovia; but they are incapable of cancerous degeneration; indeed, there is incompatibility between fibrous productions and cancerous degeneration.

Such are, according to M. Cruveilhier, the general characters of fibrous formations. Do they apply to some of the organic productions which are observed in the mammæ? M. Cruveilhier believes that they do, founding his views on a number of cases of clinical observation and on some facts of pathological anatomy.

The mammary gland presents, continues M. Cruveilhier, a structure which is highly favourable to the development of fibrous tumours, being composed of adipose tissue, of granulations, and of cellular and fibrous tissue. The fibrous bodies of the mammæ present themselves under the form of small spheroidal tumours, of a volume which varies from that of a millet-seed to that of a fowl's egg, or above. Their surface is sometimes smooth, sometimes mamillary; their hardness is extreme, occasionally like that of a stone. These tumours are generally subcutaneous, but may develop themselves in the interior of the mammary gland; they are exactly circumscribed, quite distinct from the tissue of the gland, to which they only adhere by loose cellular tissue. They offer the mobility of a lymphatic ganglion, and roll, as it were, under the fingers, whence the popular term of *glands*.

Thus the characteristic features of fibrous bodies of the mammæ are,—spheroidal shape, perfect circumscription, mobility, and independence of the tissue of the organ in which they appear.

Fibrous tumours of the mammæ not having been yet distinguished, either clinically or anatomically, from other tumours of the breast, and more especially from cancerous tumours, they are treated in the same manner as these latter lesions, by extirpation. It is generally asserted that the tumours, vulgarly called glands, may exist for a greater or less length of time without degenerating, but that when women reach the age of forty-five or fifty they then, nearly always, increase rapidly, infect first the adjoining tissues and then the entire economy, presenting all the characters of incurable cancer. The result of such ideas is, that the extirpation of the tumour is nearly always proposed, and accepted as soon as the terrible word cancer is pronounced.

M. Cruveilhier states that the first doubts as to the nature of these tumours arose in his mind about fifteen years ago, owing to his having met with several of these indolent rolling mammillary tumours in one or both breasts, in young girls scarcely arrived at the age of puberty, and in young women full of health and vigour. It then struck him as strange that tumours such as these, generally accidentally discovered, should be cancers in the first stage. His doubts became

still more confirmed from the circumstance of the tumours of several of these females, who had refused to submit to any operation, not undergoing any increase in size, and not degenerating, although some had had children and suckled, and others had passed the critical period of life, and also from the circumstance of several of his patients in whom such tumours had been extirpated not having had any return of the morbid growth.

Having examined a great many mammary tumours extirpated by various surgeons as cancerous, he had found that a certain number presented all the anatomical characters of fibrous bodies above described, and not those of cancer. Whilst thus studying the anatomical characters of tumours of the mammæ he had met with a remarkable pathological disposition. He had found that a certain proportion of these fibrous bodies, instead of being full, as they at first appeared to be, were hollow, and sometimes contained a viscous synovial kind of fluid. He had several times found mammary fibrous tumours, which had rapidly attained a large size, and which, on that account, had been extirpated, saturated with a viscous fluid, exactly like uterine fibrous formations.

M. Cruveilhier ended by relating the following case:—Fifteen years ago, a lady, forty years of age, consulted him about several tumours which she had had in the breasts since the age of puberty. Her general health was good, and her complexion fresh and healthy. There were three tumours in the left breast, of which two were as large as hen's eggs, and one in the right as large as a turkey's egg. These tumours were perfectly distinct, of a stony hardness, lobulated on their surface, rolling underneath the skin, and perfectly independent of the mammary gland. For some time the *embonpoint* of the patient had been increasing, and she fancied that the tumours had likewise increased in size. She had been advised to submit to an operation. Looking upon these formations as of a fibrous growth, M. Cruveilhier told her not to pay any attention to them, and not to feel uneasy, as they were neither of a cancerous nature nor susceptible of degeneration. Unfortunately she did not follow this advice, but consulted a practitioner, who fancied that by the application of leeches, the use of baths, and very low diet, he could bring about the resolution of the tumours. After undergoing this treatment for eight months, this lady, who had become excessively debilitated, was seized with erratic erysipelas, which, after running over the entire surface of the body, fixed itself on the right mammæ, and gave rise to a phlegmonous abscess, under the influence of which she sunk exhausted.

At the post-mortem examination all the internal organs were found healthy. The mammary tumours, as movable as when M. Cruveilhier first examined them, were only found to adhere to the gland by loose cellular tissue, and were enucleated with ease. The texture of these tumours was extremely dense, and presented none of the characters of cancerous tissue. The strongest pressure did not give rise to any oozing of fluid or of cancerous substance. Dissection showed that the tumours were formed by a multitude of granulations firmly pressed one against the other, sometimes adhering, sometimes free.

M. Blandin opened the discussion by stating that the memoir which M. Cruveilhier had read before the academy deserved serious attention and discussion, inasmuch as the treatment of tumours of the breast at present resorted to by surgeons, must be completely modified were the profession to accept his ideas, which may be thus resumed:—*That fibrous tumours were very frequent in the mammary region; that they never degenerated into cancer; that they may be diagnosed with certainty; and lastly, that they ought not to be extirpated.*

He did not believe, for his own part, that fibrous tumours were common in the mammary region; a number of tumours thus termed by some surgeons were merely cancers in a state of crudity, scirrhus more especially presenting this fibrous hardness in the first period of its formation. He differed also from M. Cruveilhier in his anatomical premises. He did not think that the breast contained naturally much fibrous tissue; it contained considerable masses of condensed cellular tissue, but no truly fibrous tissue. M. Cruveilhier also stated, as a proof of the fibrous nature of these tumours, that they did not return when extirpated; but that was admitting that really cancerous tumours always did

reappear under such circumstances, a doctrine which he was not prepared at all to admit, which, indeed, he repudiated with all his might. As to fibrous tumours not degenerating, such an opinion was contrary to reason and contrary to facts. Normal fibrous tissue degenerated, as was proved every day by the fungous growths of the periosteum and of the dura mater, and why should not accidental fibrous formations? Moreover, he had seen fibrous tumours of the uterus which had undergone a true cancerous degeneration, and similar instances had been mentioned by Dupuytren at his clinique. He admitted, however, that such degeneration was exceptional, and that fibrous growths generally remained stationary, or merely underwent a petrous transformation.

He did not think either that it was possible to diagnose during life fibrous bodies of the mammæ from other tumours, as M. Cruveilhier asserted. The characters which he had assigned to them also belonged to encysted cancerous tumours. This being the case, how was it possible to distinguish one from the other, the more so as both might be extirpated without much chance of reproduction. He believed that the distinction was only possible with the assistance of the scalpel, but such a posthumous diagnosis is of but little use towards solving the question which was then being discussed.

Not believing in the possibility of an accurate diagnosis, and admitting the possibility of the degeneration of fibrous bodies themselves, he could not agree with M. Cruveilhier as to the impropriety of extirpating the tumours which he had described. Encysted cancerous tumours might, like fibrous tumours, remain for years indolent, but if not destroyed they became at last painful, increased with rapidity, and infected the economy. He had operated for a large encysted encephaloid tumour of the breast which had remained small, indolent and stationary for twenty years. He thought that extirpation ought to be the rule, and the expectant system the exception, and that the reason why now operations for these forms of cancers were scarcely ever successful, was because the operation was generally deferred too long. He was afraid that the opinions of M. Cruveilhier would do much mischief if they were adopted by practitioners generally. Finally, he believed that fibrous tumours of the mammæ were very rare, especially if compared with other tumours of the same region; that they were susceptible of cancerous degeneration, although such a termination seldom occurs; that they could not be accurately diagnosed, and that consequently they ought to be extirpated as well as encysted cancers, with which they had the greatest symptomatical analogy.

M. Rochoux regretted that M. Cruveilhier had not examined more attentively the structure of the different tumours of the breast. In the present state of science examination with the naked eye was insufficient; recourse must be had to the microscope. With its assistance the organization of these tumours might have been more efficiently analyzed. He himself had studied fibrous texture with the microscope, and had found it extremely difficult to distinguish natural fibrous tissue from cellular tissue. Nothing could be more confused than accidental fibrous tissue; the fibres were so interwoven that it was impossible to follow them.

M. Gerdy thought that in some cases fibrous tumours of the breast might be diagnosed, but the diagnosis was always difficult. The surface of cancerous tumours, when compression is used, becomes covered with slight depressions, owing to an alteration of the cellular tissue. As the disease advances the nipple is drawn inwards, and the tumour is the seat of lancinating pains. Sometimes, however, the anatomical characters above enumerated exist without there being any pain. In all these cases an operation should be resorted to. Operations performed on the breast ought not to be considered as very serious; they were much less so than amputations of the limbs, which always presuppose deep-seated alterations of the osseous system. If a mammary tumour presented none of the above symptoms; if it was movable, indolent, and did not increase in size, he did not think it necessary to operate. He knew an unmarried lady who had borne, for twenty years, a benign tumour of this kind which had never progressed.

M. Velpeau agreed in some respects with M. Cruveilhier. It was an undeniable fact that there were non-cancerous tumours of the breast, and that many of these were fibrous, but he did not think that all those which M. Cruveilhier had described as fibrous were really such. There was a peculiar kind of tumour which he had called *fibrinous*, and which was formed by the organization of blood, or any other fluid which might have been extravasated in the mammæ subsequently to a blow, to a contusion, or during menstruation, &c. M. Cruveilhier appeared to have comprised these tumours among his fibrous formations. He was led to believe that this was the case because they were very frequent, and differed in all their characters from cancerous tumours; but they also differed from fibrous tumours. He thought that there was a distinction to be established between fibrinous tumours on the one side, fibrous tumours on the other, and the four forms of malignant growths recognized by Laennec, by Bayle, and since that by all anatomo-pathologists, viz., encephaloid, scirrhous, melanoid, and colloid growths. All these forms of tumours were notably different one from the other. The individual characters were not sufficiently distinct to enable us always to distinguish them during life; but they were extremely easy to recognize by their microscopic peculiarities. The most recent microscopic researches, more especially those of MM. Vogel, Müller and Mandl, had much contributed to enlighten the pathological anatomy of these tumours. Their characteristics might be reduced to this: in fibrous tumours the microscope only shows fibres and fibrilli. In the four forms of cancerous tumours which he had mentioned, there were cells, globules united so as to form alveoli. There was, therefore, a fundamental difference in the primitive and intimate organization of these tumours; moreover, the former were not susceptible of degeneration, whereas the latter always degenerated. In this he agreed with M. Cruveilhier. Can, however, these different forms of tumours be recognized in the living subject? In well-marked cases he thought it possible, but in many circumstances nothing could be more difficult. The globular shape and isolated state which M. Cruveilhier had given as distinctive characters were sometimes observed in colloid and encephaloid tumours. If, however, tumours presenting these characteristics were observed in young women, there was every reason to suppose that they were fibrous or fibrinous, and not cancerous, cancerous formations, as every one knows, not often developing themselves in young women.

In the course of the discussion it had been stated that fibrous tumours were capable of degenerating, and that there had been cases of fibrous bodies of the uterus which had thus degenerated. Now, he did not know of any one well-authenticated case of such a transformation. Either the tumours which had degenerated were not fibrous, or the degeneration was not of a cancerous nature. All tumours had their peculiar characters; they constituted distinct *individualities* which were not transformable one into the other. They had not the same characters, the same progress, the same termination. He did not mean to say that the degeneration of fibrous tumours was altogether impossible, because it was impossible to limit the operations of the human organization; but he must say that if degeneration under such circumstances had ever taken place, it must be looked upon as quite an exception.

M. Cruveilhier did not appear to have sufficiently considered the question of treatment, when he stated that these tumours were not to be extirpated if recognized. Although thus condemning the operation, he proposed no other means of cure. It would have been better had he endeavoured to arrive at some practical result on this point. As to the really cancerous tumours, there was but one plan of treatment, and that was extirpation. There were many cases on record of cancerous tumours cured by other means, but he did not believe that there was one really authenticated instance of such a cure in the annals of science. There was great difference of opinion between surgeons and physicians with respect to the propriety of operating for cancer. He believed there was exaggeration on both sides. There could be no doubt that the operation was sometimes successful. He himself had amputated, eight years ago, the breast of a lady who had borne an enormous ulcerated encephaloid tumour of the breast for several

years. There had not been since then the slightest relapse, and the health of the patient was perfect. This case alone would suffice to decide the question. Cancer left to itself was necessarily a fatal disease; the operation was sometimes successful; therefore it must be performed, and that as early as possible, before it had acquired great development, and had infected the economy. M. Velpeau concluded by thus resuming his opinions on the subject:—

There are fibrous tumours of the breast which do not endanger the life of patients, and which are not liable to degenerate. But, as generally speaking, we are doubtful as to the true nature of such tumours, as their presence is a perpetual source of anxiety and torment to the females who are affected with them, as the operation by which they are extirpated is nearly always an "innocent" one, there is no reason why we should hesitate to extirpate them.

M. Cruveilhier replied, that he congratulated himself on having originated the discussion, as through it a most important fact had been established, viz., that there existed fibrous tumours of the mammæ. Henceforth, whenever a diagnosis of a tumour of the breast had to be made, it would be necessary to take into consideration the possible existence of a fibrous growth. He was sorry, however, to find that he differed with his colleagues on most other points. He thought these tumours of frequent occurrence. M. Blandin thought them very rare. He thought it generally possible to distinguish them from other tumours; this was denied. He could only answer that on these points he formerly entertained the opinions which had been emitted during the discussion; he should then have said, with M. Blandin, that fibrous tumours were rare, difficult, if not impossible to diagnose, and could degenerate. But for the last fifteen or twenty years his attention had been particularly directed to the study of this question, and he had finally arrived at the conclusions contained in his memoir.

It had been said that fibrous tumours were merely the germs of cancers. During the eight years that he was physician to the Salpetrière,* he had met with fibrous tumours of the breast in women eighty years of age, nearly all of whom had borne them since their youth. If they were cancerous germs they were rather old ones. He believed that in pathology there were laws of coincidence and laws of exclusion, with reference to certain diseases. Such an exclusion existed between fibrous and cancerous tumours. He had never seen at the Salpetrière cancer supervening in old women who presented fibrous tumours of the uterus. This law of the incompatibility of the two diseases had appeared to him so universal, at least for the uterus, that he had felt authorized in telling persons who came to consult him for fibrous tumours of that organ, that they never could have cancer. He admitted, with MM. Rochoux and Velpeau, that the microscope was calculated to throw additional light on the subject, and was sorry that his leisure had not allowed him to have recourse to that source of information. As to the difficulties of the diagnosis, he did not attempt to deny them. However much the art of diagnosing tumours of the breast was improved, there would always be doubtful cases, and in such cases he agreed with MM. Gerdy and Velpeau that it was expedient to operate. He would say the same of tumours of this nature which proved a continual source of uneasiness and anxiety to the women who presented them. He believed with M. Velpeau that extirpation was the only real mode of cure.

M. Moreau had seen cases analogous to those mentioned by M. Cruveilhier, and he considered that the discussion had established the fact that there were fibrous tumours to be found in the mammæ. He thought that when there was reason to doubt the nature of a tumour of the breast it was better to wait than to operate. It had been said that the excision of these tumours was an innocent

* The Salpetrière is a colossal hospital or asylum situated on the outskirts of Paris, the population of which is nearly 6000. It is devoted to the pauper female insane, of whom there are 1500; to women affected with incurable complaints, or more than seventy years of age, of whom there are above 3000; and to epileptic and idiotic females drafted from other charitable institutions, or belonging to the department of the Seine.

operation. He did not think so; the slightest operation, as every one knows, might give rise to the most serious accidents.

M. Roux said that he also was of opinion that it would be unfortunate if the ideas of his honourable colleague made many partisans. Indeed, he should have been better pleased had they not gone farther than the assembly in which he spoke, as, were they generally adopted, many women would infallibly fall victims to organic diseases of the mammæ who otherwise might have had some chance of being saved.

An organic lesion common in its manifestation to several organs, or to the same tissue in several parts of the body, did not, however, show itself in all these organs entirely with the same characters. Thus, the fibrous bodies of the uterus, the fibrous polypi of the nasal fossæ, the fibrous tumours of the bones of the limbs, the funguses of the dura mater, differed one from the other. There were certain tumours of the mammæ which M. Cruveilhier had called fibrous, and, perhaps, according to this view, consistently, but they were very different from the fibrous bodies of the uterus.

That the breast was often the seat of non-malignant tumours had long been known, and in this respect surgery was more advanced than M. Cruveilhier supposed. These benign tumours, as they were sometimes called, had been more especially described by Sir Astley Cooper and by Mr. Travers. They were generally encysted, indolent, movable, such as M. Cruveilhier had described, and were of various kinds. There were hydatid tumours, there were tumours of a very painful nature, small, of a dense, homogeneous tissue, and of a grayish-white colour; tumours similar to the engorged lymphatic ganglions of scrofulous subjects; others difficult to describe, which had been called scrofulous tumours by English surgeons; there were simple engorgements of the mammary gland, termed by Abernethy "mammary tumours." It was all these forms of induration which M. Cruveilhier had united under the head of fibrous tumours. He saw no harm in their being thus termed, provided it were well understood that they were not all identical, and they were not of a similar nature to other fibrous formations, especially to those of the uterus. They did not present the same lamellar texture, and never became, as far as he knew, impregnated with calcareous substance. He did not, however, believe that all these forms of tumour, taken collectively, were often met with. Every year he performed, on an average, from fifteen to twenty operations on the breast, and in the course of his life had most years met with several examples of these kinds of tumours; but for the last three or four years the tumours he had extirpated had all been cancerous formations.

M. Cruveilhier had said that it was easy to recognize with the scalpel the anatomical characters of fibrous tumours on the one hand, and of incipient cancerous growths on the other. This was generally true, but still there were occasionally cases in which the most experienced surgeons remained uncertain, even after the most careful anatomical examination. As to the non-degeneration of fibrous formations, and their incompatibility with cancers, it was a gratuitous hypothesis. What cancer arises in the midst of our tissues in their normal state, and in the midst of fibrous tissues among others, and the possibility of its development in abnormal growths is denied? He thought that whatever was the presumed nature of a tumour of the breast, if it resisted all the various modes of treatment calculated to effect its resolution, it should be at once extirpated.

With regard to the question which had been raised as to the propriety of operating for cancerous tumours, and the chances of cure, his experience and opinions were decidedly in favour of operation. He thought that cancerous affections originated principally under the influence of a general cachexia, or predisposition, but sometimes, also, to a certain extent, owing to a local cause, and in the latter case they were less likely not to return when excised. He had three times extirpated on women voluminous cancers developed on the arm, where issues had long been kept up; in all the cases there was no relapse. In 1831 he was (through a singular coincidence) consulted for well-marked sarcocele by three different persons, on all of whom he excised the diseased testicle.

They were now all three in perfect health. He had even repeatedly seen the excision succeed when performed for a relapse a second or even a third time. In 1819 he amputated the breasts of two ladies for large cancerous tumours. Within the year there was a return of the disease in both instances. He again operated, and the disease never returned. One died seven years after from some acute disease, the other died only three years ago. The most rapid relapses were observed in young patients. He remembered a very striking illustration of this truth. The patient, a young woman, twenty years of age, blooming with health, had in one of her breasts a small, indolent, movable tumour, very similar, indeed, to those described by M. Cruveilhier. It was excised; very shortly afterwards the entire breast became the seat of cancerous degeneration, and she died within five months.

M. Cruveilhier was astonished, to say the least, that it should be asserted that his communication to the academy was calculated to do harm in practice. In his opinion it was not *he* who candidly brought forward the result of his studies and experience, with the view of saving unfortunate females from useless operations, that ought to be blamed, but those who, extirpating all tumours of the breast as cancerous, or as susceptible of becoming cancerous, threw, unnecessarily, consternation into families and into the minds of their patients. In the course of the discussion the existence of fibrous tumours had been admitted by every one, even by M. Roux, although his admission was qualified. The fact, therefore, which his personal experience and dissections had proved to him was admitted as correct. At the same time he did not lay claim to any merit of originality, but merely to that which might accrue from his having forcibly directed the attention of the profession to the existence of these tumours. On consulting Bayle's posthumous treatise on cancer, he had found that Bayle admitted what he calls "fibrous degeneration" as common to all the tissues, and even devotes a chapter to fibrous tumours of the mammæ. He was, therefore, wrong in stating, as he did in his memoir, that Bayle merely recognized uterine fibrous bodies. Moreover, Bayle had known them become cartilaginous or osseous. Sir Astley Cooper had accurately described fibrous bodies of the mammæ under the name of chronic mammary tumour. He admitted that pathological formations, or types, were slightly different in different parts of the body, as was the case with animals or plants in different climates or soils; but the species was invariable and always to be recognized. As to the frequency of fibrous growths in this region, that was a question of observation, and could only be decided by observation. He persisted in looking upon them as very frequent in their occurrence. He thought that what M. Roux had said about the different forms of non-malignant tumours of the breast was very obscure, and did not show that surgeons were as far advanced as he appeared to think in their knowledge of diseases of the mammæ. Taking every thing that had been said into consideration, he did not see any reason for changing his opinions, and persisted in his assertions, viz., that the extirpation of fibrous tumours of the mammæ was not necessary, that it was to a certain extent facultative.

M. Amussat, M. Berard and M. Lisfranc successively addressed the academy, but as their speeches were merely repetitions of the arguments used by MM. Blandin and Roux, we shall not reproduce them. They all agreed that it was difficult, if not impossible, to recognize the real nature of the kind of tumour described by M. Cruveilhier, and thought that such tumours ought to be extirpated if the means of treatment which we possess failed to produce resolution.

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57. *Extirpation of the Scapula and a part of the Clavicle.* By M. Rigaud, Professor of Clinical Surgery in the Medical Faculty of Strasbourg.—A soldier, 51 years of age, had a tumour on the upper part of the left arm for which Professor Rigaud, in 1841, amputated the arm at the shoulder-joint. The wound resulting from the operation healed, and the patient continued in good health for eight months; when an osseous tumour was discovered in the axillary region, arising from the anterior angle of the scapula. M. Rigaud thought it necessary to remove the entire scapula with the external extremity of the clavicle, and this

was performed in the course of the year 1842, with entire success; the patient recovered in two months, and has since enjoyed excellent health.—*Comptes Rendus*, July 15, 1844.

OPHTHALMOLOGY.

58. *On partial Excision of the Opaque Cornea as a Cure for Blindness.*—M. Malgaigne, in the April number of *Le Journal de Chirurgie*, has published a long and learned paper on the subject here announced. It is preliminary to another, wherein he intends to embody the result of his recent experiments and observations; and he seems determined that, on the present occasion, nothing recorded in the history of the science should escape his reflection and criticism. Waiting the result of these original investigations, we shall supply a short analysis of all that appears important in the present communication.

The reading of M. M.'s short note in *L'Académie des Sciences* in March, 1843, was the means of his receiving various communications from several of his colleagues, more especially from MM. Blandin and Sichel. From the former of these gentlemen he learned that a couple of travelling oculists in France have, for fourteen years, been in the habit of performing this operation with varying success; putting forth no claims to invention, but affirming they only follow a practice which was successful before their days.

The author also refers to three memoirs which have since been published on the subject, by M. Rognetta, in *Les Annales de Thérapeutique*, by M. Desmarres in *Les Annales d'Oculistique*, and by Dr. Hamilton in the Monthly Journal for March last; in the last two of which the practice, in certain circumstances, is advocated, whilst in the first it is unmercifully condemned.

M. M. ascribes the first notice of this operation, in medical records, to Saint Ives in the year 1722. This eminent man disapproved of the practice for the usual run of opacities of the cornea; but recommended it in those cases where the opacity was due to the sequela of a small-pox pustule.

Dr. Mead is the next author who alludes to the subject, in the few words so often quoted, viz., "he had only once or twice employed the partial excision with success."

There follows next the opinion of the German, Eschebach, in 1651. A regular practitioner himself, he had opportunities of becoming acquainted with the misdoings of some wandering and unprincipled quacks, who, on two occasions, had undertaken to perform much, and miserably failed. His judgment, then, was decidedly condemnatory.

In France, M. Demours held similar language in 1768, enforcing it by the details of a case in which the opaque cornea had been subjected to innumerable scarifications, which resulted in leaving the opacity worse than it had been before.

In 1779, Professor Gouan, of Montpellier, read to the Royal Society of that city, a case in which the result was the very reverse of the preceding. In 1777 a child aged seven was brought to him, which had lost its right eye when three months old, and when eighteen months, and labouring under small-pox, had been rendered quite blind by an opacity or cicatrice which covered the whole cornea of the left eye. For this the more common remedies—stimulants, irritants, &c., had been long used in vain; and the professor then advised partial excision. For the performance of this operation he engaged the services of M. Pellier, surgeon oculist to the king, who excised about $\frac{2}{3}$ of the thickness of the diseased membrane. The child showed no indications of pain; cold dressings were applied, and after six days he could distinguish such objects as the fingers, keys, &c. Dr. Gouan subsequently ordered the application of nut oil, under which the vision improved, and, after the lapse of two years, the cure was still considered perfect.

In 1789 M. Pellier gives the result of his more extended experience during

ten years, in these words. "Though I have described this operation for the cure of albugo and nephelium, yet uniform success is not to be expected. Experience has taught me its insufficiency in some cases, and its success in others."

Scarpa was very decidedly opposed to the operation, introduced, he alleges, by the ignorant, and commended by the charlatan. Wenzel was equally severe, remarking that it was likely to produce staphyloma.

In spite, however, of these authorities, Baron Larrey thought that the operation was sometimes worth a trial. In opacities of the cornea, says Larrey, of a certain degree of thickness, the membrane may be thinned down by repeated strokes of a slender bistoury. I performed the operation upon a young lady at Toulon, and thereby removed an old opacity which covered the whole extent of the cornea, and completely interrupted the entrance of the rays of light. The transparency continued in the part from which the opacity was removed, and the patient ever afterwards saw very fairly.

These are all the facts and testimonies, *pour et contre*, which the commendable zeal of M. M. has collected, and unquestionably they form a useful addition to our stock. Finally, the author concludes with Professor Rosas' two cases at Vienna in 1833-4, and with a minute account of Dr. Gulz's case in 1842.—*Lond. & Ed. Monthly Journ. Med. Sci.*, July, 1844.

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59. *Spontaneous cure of Cataract.* By Dr. Giehrl.—A stone-breaker, who had suffered from cataract of the right eye from his youth, had the misfortune, whilst pursuing his occupation, to have his left eye struck by a splinter, which produced a violent concussion of the eye, and gave rise to inflammation and loss of vision. The man applied to Dr. G., who, on examining the eye, found, along with considerable inflammation, a completely formed cataract. He combated the former symptom by antiphlogistic remedies, and advised the patient, as soon as all irritation in the left eye should have disappeared, to have the cataract removed from the right one, in which the power of vision had been lost at an early period. On this the patient applied elsewhere for advice, and consulted Dr. S. in A.

In order to examine the eye more minutely, the latter dropped into it a solution of the extract of belladonna; in consequence of this the pupil dilated largely; at the same time, the opaque lens fell into the anterior chamber; and vision was immediately restored. The lens became absorbed by degrees, and the patient was cured.—*Lond. & Ed. Monthly Journ. Med. Sci.*, Aug. 1844, from *Allgemeine Zeitung für Chirurgie, &c.*, April, 1843.

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60. *Death from Fright after the operation for Solution of Capsular Cataract.* By Jonathan Toogood, M.D.—J. G., aged 23, of a scrofulous and hysterical temperament, was admitted into the Bridgewater Eye Dispensary, February 16, 1839. She stated that she had always enjoyed good health to the age of sixteen, and had taken the charge of a dairy; that after this period the catamenia not appearing, she became subject to headache, had frequent attacks of hysteria, lost flesh, and was affected with a severe form of porrigo, which no medical treatment relieved. For the last five years the proper functions of the uterus had entirely ceased. About midsummer last she was suddenly seized with an acute pain in the left eye, accompanied with dimness, which, in a few hours, became so much worse that she was barely able to distinguish light. A fortnight ago the right eye became similarly affected, attended with the same sensations, and as speedily followed by complete loss of vision. On the 18th, the operation for solution was performed posterior to the iris, in both eyes, and the cataracts broken up. Nothing unusual occurred, but on the next morning she complained of pain in the right eye, extending over the temple and brow, and the iris appeared somewhat hazy. Leeches were ordered, a plaster of opium and belladonna to be applied over the brow, and five grains of hydrargyrum cum creta, with three of Dover's powder to be taken every four hours. The proposal to apply leeches excited the most extraordinary alarm in her mind; she exclaimed immediately—"Oh, I can never have leeches; I shall die if I have leeches." Her breathing became

very much hurried and laboured, her apprehension for her ultimate recovery so great, that every means of quieting her alarm failed; palpitation of the heart succeeded, with delirium and great prostration of strength, with violent perspiration, and, in spite of all treatment, she died at 1 A. M., the next day, breathing to the last in the same laborious manner.—*Prov. Med. & Surg. Journ.*, June 26, 1844.

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61. *A case of partial Amaurosis cured by the aid of Urtication.* By M. Polto.—A woman, 35 years of age, habitually healthy, had, in September, 1835, consequent upon her last confinement, an exfoliating exanthema covering the whole body. Being exposed to cold it completely disappeared: from that time there ensued general indisposition, derangement of the digestive organs, obscureness of vision and bronchitis. This state of things existed till the month of January, 1837. M. Polto having been called in, found the patient in bed, nearly blind, weak, and coughing continually; she could scarcely distinguish a ray of light; every thing appeared to her enveloped in a thick mist; the pupil was clear but immovable. M. Polto at once prescribed the use of hot diaphoretic drinks, afterwards dry friction, mustard poultices, blisters, and tartar emetic ointment. There was an improvement; the cough became less troublesome, the strength revived; the dryness in the skin, however, and the amaurosis still remained; many anti-amaurotic collyria were used without any success. The middle of June arrived, and M. Polto proposed submitting the patient to urtication and flagellation; he gathered some large fresh nettles, and having tied them up in bundles, he operated in the following manner:—The patient lying naked upon the bed, the operator commenced beating with the nettles, the feet, legs, thighs, buttocks, trunk, arms and neck; the head alone was spared. Immediately after she was made to lie down between two blankets, mustard poultices were applied to her feet, and hot drinks administered. She passed a most uncomfortable night, but in the morning the skin did not present any eruptive reaction. For five days the flagellation was repeated morning and evening. The skin bled in many places from the action of the nettles; she became, in consequence, dreadfully tender; and at last she was covered with a mixed eruption, partly erysipelatous, partly papular, partly purpurous, partly vesicular, partly phlegmonous, partly erythematous. Fever, conjunctivitis, cephalalgia and tinnitus aurium ensued; full pulse, urine scanty. Blood-letting, infusion of digitalis, and tartar emetic wine, were ordered. The symptoms abated, the eruption exfoliated, but the purpura remained for nine days; some of the papules suppurated. At the very moment of the cutaneous reaction, the sight began to improve; the patient distinguished persons when they approached her, and at last the functions of the eye became restored to a perfectly normal state.—*Prov. Med. & Surg. Journ.*, 26 June, 1844, from *Giornale delle Scienze Mediche di Torino.*

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62. *Tetanus consequent on the treatment of Fistula Lachrymalis, by the insertion of Scarpa's style.*—A woman, 50 years of age, of lymphatic temperament, subject to rheumatism, was anxious to get rid of an epiphora, or involuntary flow of tears, which had troubled her for some considerable period. A surgeon consequently made an incision into the affected parts, and inserted Scarpa's pin [style]. During the operation the patient complained of pain, which extended itself from the artificial canal to the eye, the cheek, the forehead, and the angle of the jaw. Eight days passed, when, after a restless night, the patient perceived that she could not open her mouth. In the evening, M. Petri, who was called in, discovered a contraction of the temporal and masseter muscles, and general convulsive movements. He proposed to remove the lachrymal pin, but the ordinary medical attendant, thinking it was only rheumatic, would not consent. The patient was bled, and twenty leeches were applied to the neck. The following day the contraction had reached the neck and trunk; the arms next became affected, and, lastly, general convulsions supervened. The pin was removed and opium exhibited; but, notwithstanding a deceptive remission, the patient sank on the fourth day.

On examination, the lachrymal passages presented no extraordinary lesion. Permission was not obtained to examine any other part of the body.

A similar case was communicated to M. Petri by Dr. Betti, who witnessed its occurrence in the practice of Vacca. The tetanic symptoms immediately followed the introduction of the pin, but this celebrated surgeon suspecting the cause, removed the pin [style], and the trismus in a short time gave way.—*Prov. Med. & Surg. Journ.*, from *Gazette Toscana delle Sc. Med.*

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63. *Intermittent Blindness.*—Mr. Bradshaw related to the Reading Pathological Society the very interesting case of a French lady, aged 37, who was seized with fits of complete blindness. They came on suddenly without probable cause, night and day, irregularly, without periodicity, and each fit lasted about three hours. During the attack the pupils were widely dilated, there was complete blindness and perfect immobility of the eyes and their appendages. After the attack they resumed their wonted activity, and were apparently in a perfectly healthy condition. In other respects the lady was in the best possible health. This affection had continued for some years, and the fits recurred with about the same frequency, viz., three in a fortnight. She had submitted to a variety of treatment without benefit. Her sister was affected in a similar manner.—*Prov. Med. & Surg. Journ.*, 24 July, 1844.

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64. *Spasm of the Orbicularis Palpebrarum.*—Mr. May mentioned to the Reading Pathological Society the case of a lady, aged 34, who had been affected for seven years with almost continual spasm of the orbicularis palpebrarum, and the muscles allied in the production of frowning.—*Ibid.*

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65. *Artificial Pupil made in the Superior Eyelid.*—In a case of contraction of the orbicular muscle of the eyelid, which had resisted every remedy, even the twice-repeated section of the muscular fibres, M. Gerold resorted to the following operation, which he has been the first to propose and to execute. After introducing a small, flat piece of wood, well oiled, underneath the superior eyelid, exactly opposite the pupil of the eye, he made a crucial incision, which completely divided the skin, the muscle and the mucous membrane. The external skin was then dissected off the four flaps thus formed, and the mucous surface was turned outwards and fastened to the base of the flaps, so that the mucous membrane formed the circumference of the artificial opening. No accident supervened, and vision was restored; the patient wore spectacles as a precautionary measure.

Such intractable cases as the above are of very rare occurrence; still the operation of M. Gerold, which is a most ingenious one, is a valuable addition to science. It may likewise be resorted to in cases of partial or complete paralysis of the third pair, with prolapsus of the superior palpebra. The longitudinal section of the eyelid, which has been proposed in such cases, is evidently a much more objectionable operation; it interferes more with the contraction of the orbicular muscles, exposes a greater extent of the eye to the external atmosphere, and consequently renders the inflammation, which usually follows such exposure, as in paralysis of the seventh pair, much more probable.—*Lancet*, March 23, from *Annales Belges d'Oculistique.*

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66. *Ligature of the Eyelids.*—In chronic inflammation of the eyes, with relaxation of the superior eyelid, ulceration of the cornea and incipient pannus, the success of this slight operation is often surprising. Often the day after it has been performed, the ulcerations are favourably modified, and the vascularity of the cornea and conjunctiva has disappeared. The same remark may be made with reference to other forms of chronic inflammation of the cornea, to blepharoplegia and blepharoptosis. This remedy alone is frequently sufficient to effect a cure. M. Ammon thus describes the operation:—A transversal fold is made in the upper eyelid, and the base of this fold is pierced, by means of a curved needle, with two threads of cotton. The extremities of this kind of seton are

then fixed on the forehead by means of a piece of diachylon, the eyelid being sufficiently raised not to touch the globe of the eye. This *suspension* of the eyelid has a double influence. It acts as a derivative or seton on the one hand, and, on the other, preserves the eye from the contact of the inner surface of the eyelid, which is often granular, and occasions and keeps up the inflammation. There is only one objection [a very weighty one we think] to this operation, it may give rise to erysipelas of the eyelids.—*Ibid.*

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67. *Cyanuret of Potassium for removing the stain of the Conjunctiva caused by Nitrate of Silver.*—It is well known that nitrate of silver, when long used, has the effect of turning the conjunctiva of a dark olive colour and greatly disfiguring the patient. M. Guthrie, in a late clinical lecture, stated that a solution of the cyanuret of potassium (three to six grains to the ounce of distilled water) applied by drops every other day, is an admirable remedy for removing this olive colour. Mr. Brock is said to have first proposed this remedy; which is also equally effective in removing the stain made by iodine on the skin.

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68. *Acute Retinitis caused by the use of the Microscope.*—Mr. W. W. Cooper communicated to the Royal Medico-Chirurgical Society, (June 18, 1844,) a case of acute retinitis caused by the use of the microscope. The patient was engaged in dissecting the nerves of the human tongue under a powerful microscope; the nerves, having been cleanly dissected, were of a dazzling white, and whilst he was intently regarding them through the microscope, the sun, which had previously been obscured, suddenly shone forth with all its brilliancy upon them. Acute pain was instantly felt in the eye, pervading the whole globe. In about twenty minutes the pain subsided, though all uneasiness did not cease until evening.

The following day, the eye not being painful, the patient incautiously used it to complete his dissection, when the same occurrence took place as on the preceding day. This was followed by great and deep-seated pain, pervading the whole globe, with much intolerance of light, &c. Under the use of leeches to the eye, followed by frictions with mercurial ointment and opium, mercury and cicuta and other appropriate remedies, entire recovery took place.—*London Med. Gaz.*, July, 1844.

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69. *Foreign body four years in the Eye.*—The following remarkable case of a foreign body, of considerable size, remaining for nearly four years in the interior of the eye, is related by M. Castelnau, and published in a recent number of the "*Archives Générales de Médecine:*"—

On the 29th of June, 1838, M. B., ætat. 30, foreman of the workshop of the Versailles railroad, a man of strong, robust constitution was wounded in the right eye. The accident occurred in the following manner:—M. B. was assisting a workman to introduce into some wood-work a steel wedge, which he was striking with a hammer of ten pounds weight, fixed at the extremity of a handle three feet long, when he suddenly felt a violent shock in the eye. A flood of tears passed from the eye, which was also the seat of a certain degree of pain, and sight was instantly destroyed. The patient remained some time sitting in the workshop, under the impression that these symptoms would soon disappear, as had frequently been the case before, under similar circumstances; but finding that they did not mitigate, as he had expected, after waiting some time, he returned home, and having thrown himself on his bed, slept quietly several hours. On awaking, he found that his sight had not returned, and that the pain still persisted; he, therefore, came to Paris, and consulted M. Sichel. This surgeon told him that the cornea was perforated; that the sight of the wounded eye was irretrievably lost; that it would be necessary to act energetically, in order to prevent the development of inflammatory symptoms; and that once that danger passed, there would be nothing to fear, as no foreign substance had remained in the eye. Thirty leeches were, therefore, applied behind the ears; frictions were resorted to, with an ointment of the nature of which the patient is ignorant; cold

was applied for some time to the head, by means of cloths soaked in cold water; and several mustard foot-baths were taken.

The inflammation which followed was not intense, but the pain persisted, and was accompanied by the continued oozing of an aqueous fluid, which soon produced excoriation on the cheeks. The wound of the cornea did not cicatrize. The treatment above mentioned was continued, with slight alterations, for nearly a month; at that epoch the patient consulted M. Carron du Villards, who merely confirmed the statement of M. Sichel. Soon after the wound of the cornea cicatrized. From that time the pain and oozing of fluid from the eye gradually diminished, and the patient was soon able to resume his labours. At first he could still distinguish day from night, but the sensation of light became, by degrees, more and more indistinct, until, at last, he lost it entirely, about eighteen months after the accident.

Two years had passed without any new accident, without even any pain manifesting itself. During that time the health of M. B. had remained constantly good, when one night he was seized with such intense pains in the head, more especially in the right eye and on the right side, that he uttered loud screams, and thought his reason would give way. A host of remedies were resorted to, leeches, opiates, cold applications, &c., during a day and a night, without producing any alleviation. On the second day the pain diminished a little, but it was not until the third that he was able to obtain any rest. On the fourth day all had disappeared, and for eighteen months he had no return of the cephalalgia.

At the end of February, 1842, three years and a half after the accident, I was called to see M. B. for the first time. He stated to me that for several days he had suffered pains in the right eye, which, at first dull and irregular, had become sufficiently violent to prevent his sleeping. The conjunctiva was rather red, and the cornea presented in its centre a conoïdal prominence which at once attracted my attention. On inquiring whether a foreign body might not have penetrated into the eye, M. B. gave me the details which I have just narrated. He also told me that, having endeavoured to discover what it was that struck him, he found, on one side of the wedge, the trace of a splinter; that this splinter could not be found, but that it was of too considerable a size for it to have been possible that it should have entered his eye, and remained there so long, unless it had separated into several fragments. The opacity of the cornea was such as to prevent any examination of the interior of the eye; the eye itself had rather shrunk, as if it had lost a part of its humours. From the time of the accident the patient, who was accustomed to sleep on the right side, had been unable to do so without suffering great pain in the eye. These data not having completely dissipated my doubts with respect to the presence of a foreign body in the eye, I merely prescribed cold applications, frictions with a belladonna ointment and mustard foot-baths. These measures gave no relief; the redness and pain increased, and in the course of a few days there appeared on the most elevated portion of the prominence of the cornea, a small solid angle, which its great hardness evidently showed to be a metallic substance. It was thus evident that all the accidents owed their origin to the presence of this foreign body, and I had to choose between waiting for the inflammatory process which existed, to expel it from the eye, or its extraction by a surgical operation. I thought it better to adopt the latter course, in order to put an end to the torture the patient was suffering, and therefore proposed it to him. At first he refused to submit to any operation, and I was consequently compelled merely to resort to palliative measures. A few days afterwards, however, on the 6th of March, 1842, he again called on me; he was suffering severely, not having slept for three days. The conjunctiva was swollen, and of an uniform red hue; the angle of the foreign body actually raised the upper eyelid, and had produced an ulceration on its internal surface. The metallic angle stood out about a line beyond the cornea, which held it encased like the setting of a gem; there was no suppuration of the cornea around it. The operation appeared likely to be much easier than on

the day when the foreign body was first perceived, owing to its being so much more evident; the patient himself was anxious that it should be performed.

A small incision, less than a line in length, was made on each side of the foreign body, in order to separate it from the adjoining tissues. Although the adhesions between the foreign body and these tissues were very close, yet, by passing the narrow blade of a bistoury between them, they were easily separated from one another; the surfaces of the metallic fragment were thus entirely denuded, and then came the most difficult period of the operation. Whenever the slightest traction was exercised on the foreign body, in order to bring it sufficiently forward to pass the bistoury behind it, the patient suffered excruciating pain, and yet it was impossible to separate the adhesions which its posterior surface had contracted with the adjacent tissues, without thus bringing it forward. In order to overcome this difficulty I exercised slight lateral pressure on the external angle, so as to make it act as a lever, and bring the posterior angle forward, and then, passing the extremity of a small pair of curved scissors behind, gradually excised the pedicle. The operation lasted five or six minutes; the latter part of it only was painful. When it was terminated the patient had a syncope, but of only two or three minutes' duration. He soon recovered, and was able to return home; I told him to keep cloths, soaked in cold water, continually applied to the eye, and to send for me if the pain increased, or if any febrile symptoms supervened. Instead of increasing, however, the pain diminished about an hour after the operation, and the patient slept a great part of the night. On the 7th he scarcely suffered at all, and on the 8th returned to his work, which he has never left since. The redness and swelling of the conjunctiva had diminished as rapidly as the pain. The cavity which resulted from the extraction of the foreign body has gradually filled, and there now merely exists a slight depression corresponding to the perforation of the cornea. The eye is shrunken; the cornea is of a marbled-gray colour; the sclerotica remains natural.

The foreign body was a fragment of iron, representing exactly a regular triangular prism, two nearly equal surfaces of which formed a right angle; its length was seven lines, the width of the surface opposed to the right angle one line and a half; the total weight was one drachm and fifteen grains.

Among the many curious cases which science possesses of the sojourn of foreign bodies in the economy, there is, perhaps, none which can be compared to the one I have just narrated. It is difficult to say what was the precise region of the eye occupied by the metallic fragment; it is, however, certain that it was partly situated in the vitreous humour, as the two chambers of the eye would not have been large enough to contain it. A very remarkable feature of the case is its expulsion, which partly took place without any suppuration whatever. When the operation was practised the edges of the aperture of the cornea through which the metallic angle protruded, appeared as if recently cut by a sharp instrument. There was not, either, the slightest suppuration after the operation. Were the acute pains experienced by the patient two years after the accident to be attributed to the presence of the foreign body, and if so, what occasioned them? The first question may be answered affirmatively, as he had never suffered similar pains previous to the introduction of the metallic fragment into the eye; but it is more difficult to answer the second. It is, however, probable that the foreign body, as it gradually advanced from the depth of the eye to the cornea, came in contact with one of the divisions of the ophthalmic branch, and that the pains experienced by the patient were the result of this contact. The correctness of this hypothesis is rendered still more probable from the circumstance that decubitus on the right side invariably gave rise to pain in the eye. Since the extraction of the foreign body decubitus on the right side has again become easy, and is now as habitual to the patient as before the accident. This case shows how difficult it is, in some cases, to make a correct diagnosis, and how inscrutable are sometimes the operations of nature.—*Lancet*, Feb. 24, 1844.

MIDWIFERY.

70. *Chloride of Iron in Uterine Hemorrhages.*—Prof. D'Outrepont has employed with much success the chloride of iron for arresting uterine hemorrhages, both during and subsequent to labour. He used a saturated solution of the salt in distilled water. Sponges and tampons are soaked in this solution, and, after first using an injection, containing an ounce of this fluid, he plugs the vagina with the tampon, prepared in the manner just mentioned.—*Gaz. Méd. de Paris*, 21 Oct., 1843, from *New Zeitschrift für die Geburtskunde.*

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71. *Cephalamatoma of New-born Children.*—Prof. D'Outrepont, to show that cephalamatomata are not produced by a mechanical cause, quotes four cases, three of abortion, and one where the mother died of apoplexy at the seventh month of utero-gestation, and the child was extracted by the Cæsarian section, in all which the infants had cephalamatous tumours.—*Ibid.*

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72. *Dropsy of the Uterus and Uterine Tympanitis.*—At the meeting of the Scientific Congress at Strasburgh, in 1842, MM. Stoltz and Nægele, asserted that uterine tympanitis, or uterine dropsy, cannot possibly occur. Dr. Tessier, of Lyons, in an interesting article in the *Gazette Médicale de Paris*, Jan. 5, 1844, has shown that it is not only *possible* for these diseases to occur, but that they actually have occurred.

He relates a very well-marked case of uterine tympanitis under his own observation, and has collected others related by different authors. The subject of the case observed by himself was a woman 43 years of age, very nervous temperament, who entered the Hôtel-Dieu on the 4th May, 1840, to be treated for chronic metritis, complicated with hysteria.

The uterus began to enlarge after her admission, and her menstrual discharge not reappearing, the patient considered herself to be pregnant. Six months after the suppression of the menses, the uterus having risen almost to the umbilicus, the patient was suddenly seized with pains similar to those of labour, and a large quantity of fœtid gas was discharged by the vagina. As the gas was discharged, the size of the abdomen diminished, and in a few hours acquired its ordinary size. Three years have elapsed, and the patient has since been often similarly affected.

Cases of hydrometra are still more frequent and conclusive, and Dr. T. gives a summary of many examples of this affection.

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73. *Case of Enteritis simulating Pregnancy and Labour at the full time.*—A very remarkable and interesting example of this is related by M. Barbieri in the *Lond. & Ed. Monthly Journ. Med. Sci.*, March, 1844.

The subject of the case, Mrs. W., was 32 years of age, the mother of two living children, born at full time, and of one still-born at the eighth month; she had enjoyed good health for the last fifteen years. M. B. found her suffering severe and repeated uterine pains, such as occur at the end of the first stage of natural labour, and recurring, at an average, every five minutes; they commenced in the back, and stretched round the pelvis and down to the anterior part of the thighs. M. B. obtained the following history of the case:—

"The catamenia had been absent for nine months and two days; she quickened at the end of four months and a half; the motion of the fœtus had become progressively stronger every month; she had experienced morning sickness, vomiting, heart-burn, irresistible longings, aversion to wine and tea, dysuria, spots and ephiledes on the face and skin, frightful dreams, cramp and pain in the legs for the last fortnight, hemorrhoids, varicose veins, and anasarca of the legs for the last two months. All these, with the exception of anasarca, cramp, and the aversion to wine, had occurred in her three former pregnancies."

The size of her abdomen was that of a woman at the full period of utero-gestation; was hard, and the uterine enlargement felt prominent and distinctly cir-

cumscribed; "the entire abdomen bore the most minute and firm pressure at any point, without her experiencing the least pain or inconvenience. Her breasts, naturally rather small, were distended with an abundant secretion of good rich-like milk, such as to render it necessary to apply breast-glasses, which were emptied every quarter of an hour. This secretion of milk had occurred for the last two months and a half, and had never taken place in any previous pregnancy. The silvery lines referred to by Dr. Montgomery were moderately visible. The areola around the nipple was strongly marked; the nipple was turgid and prominent; about fourteen of the glandular follicles immediately around the base of the nipple were sufficiently conspicuous to indicate a former pregnancy, but by no means such as to justify the conclusion of its present existence." She, moreover, stated that the liquor amnii had been discharged about half an hour before M. B.'s arrival, and that she had a slight sanguineous discharge for the last three days, which caused her some anxiety, as it had rather an offensive odour. The nausea and vomiting had left her for the last three months; her pulse was 130, full, hard and incompressible; tongue clean and moist, and the bowels open.

Notwithstanding the above formidable array of the signs of pregnancy, Mr. B. felt dissatisfied at the absence of the glandular follicles at the base of the nipple, having always found them very prominent in all her former pregnancies; besides, M. B.'s educated ear was not reconciled to her present pains. He therefore hinted his doubts, at which she was very indignant, referring him, "*first*, To all the signs individually, laying great weight on the absence of the catamenia for nine months, stating that the menstrual secretion had previously always been healthy, as to time, quantity and quality; *second*, To the size and hardness of her abdomen; *third*, To the quantity of her milk; *fourth*, To the quickening and motion for the past four months and a half; *fifth*, To her previous experience of pregnancy; and, *sixth*, To the impossibility of her reckoning being wrong, owing to the absence of her husband during the entire period." M. B. was now obliged to leave the patient for two hours, and, on his return, he found her labouring under such powerful expulsive pains as nearly led him to alter his opinion of the case. An examination was now made per vaginam.

"The external parts were greatly relaxed, and the vagina so much dilated as easily to admit my closed hand, and from it a sanguineous discharge issued, whose odour and external characters could not be distinguished from those of the ordinary lochia, unless, perhaps, in being somewhat more offensive; but we all know that this smell, like that of sweat, is subject to considerable variety. The uterus was in an unimpregnated and healthy state, as regarded its body, cervix and orifice; the os uteri retained distinctly its transverse orifice, with well-defined and firm margins. I felt at a loss to account for the so-called discharge of the liquor amnii already referred to. It could not proceed from hydatids, cauliflower discharge, nor those splashes of urine which sometimes come away from pregnant women, as noticed by C. M. Clarke, owing to the state of the uterus. The catheter was therefore introduced, and upwards of two pints of high-coloured, transparent urine drawn off, divided into two portions, and reserved for analysis.

"As the bowels had been opened by castor-oil a few hours before my arrival, I proceeded to examine the abdomen under the chemise. In addition to what has already been stated, I found a pale-brownish stripe, nearly an eighth of an inch in breadth, in the mesial line, running from the umbilicus to the ensiform cartilage, but which certainly did not correspond to the description or opinion given of it by Mr. Turner."

Percussion was tried, but M. B. having no particular experience in it, places no dependence in the result. He did not auscult the abdomen. On examining the dorsal region, M. B. found that firm pressure could not be endured without her wincing at every attempt. Perplexing as the case was, M. B. now arrived at the conclusion, "either that it was inflammation and great enlargement of the kidneys, or inflammation of the posterior aspect of the intestines; but how could the immense indurated abdominal tumour be accounted for, more especially as the bowels were represented always to have been open?"

The pulse being strong and frequent, 64 ounces of blood were abstracted from a large orifice in the erect posture without inducing the least approach to syncope; but with great and immediate effects on the pain and expulsive action. "In about ten minutes, a state of the most profound syncope and collapse followed, which continued nearly a quarter of an hour, accompanied by an incredible discharge of liquid feces, amounting to at least four large chamber urinals, with an immense quantity of flatus, more noisy than offensive. Alarming as the case now was, I determined in trusting to her age and former constitutional powers. On recovering from this state, three grains of opium, and eight of calomel, were administered to prevent reaction. On examining the abdomen, the enlargement and induration had disappeared; and all the vertebræ could be easily touched through the parietes of the abdomen. She was now necessarily left for eight hours, owing to an obstetric engagement. At my second visit, I found she had enjoyed six hours comfortable sleep and freedom from pain; that the pain had returned during the last two hours, but was, for the first time, confined to the abdomen, where the slightest pressure could not be endured, while the back was free from it. The blood was now examined, and found to have a buffy coat of more than two lines in thickness, greatly cupped, firm and elastic; the coagulum was very dense, and floating in a small quantity of serum. One portion of her urine was then submitted to the action of heat at the temperature of 170°, and coagulated rapidly, showing distinctly the presence of a large quantity of albumen. The case appearing one of enteritis, complicated, perhaps, with Bright's disease of the kidney, she was immediately bled to the extent of thirty-two ounces, in the erect posture, but without producing any of the former results. This was followed up by the application of forty leeches to the ileo-cæcal region, and the hip-bath when they fell off; a blister was applied over the entire abdomen, to be dressed night and morning with the *ungt. hydr. fort.*; and it was resolved to give her two grains of calomel, with a fourth of a grain of opium, every four hours. On the third day the inflammation seemed to have been subdued. On the fourth I had acute gastritis to contend with, and that alone; and notwithstanding the most energetic local treatment, and the immediate suspension of the calomel, she experienced no relief, except from the unceasing use of small portions of ice, from which, while the supply continued, she remained free from the burning pain and other uneasiness. This, however, failed on the 21st; and, after enduring several hours' suffering, she died on the 22d day of the acute attack.

Morbid appearances.—On the abdomen being opened, there was found increased vascularity and thickening of the peritoneum; effusion of coagulable lymph, in the form of flocculi, with about four ounces of pus into the peritoneal cavity. The stomach presented great vascularity; two patches, the size of a half-crown piece, of softening of its coats, near the pylorus; and nearly the whole of the small curvature was more or less deeply ulcerated. Great vascularity of the duodenum, ileum and rectum; a few very small patches of softening were seen on the coats of the colon; a number of circumscribed superficial follicular ulcerations, with one small perforating ulcer, were found in the last twelve inches of the ileum.

The kidneys were in every respect healthy, as also the uterus and all the other abdominal viscera.

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74. *Pregnancy—error in Diagnosis.*—Dr. Cowan related to the Reading Pathological Society the case of a woman in the hospital who had not menstruated for the last seven months. She had been previously healthy, had menstruated regularly, and borne two children. Seven months before, she had a discharge of fluid from the rectum, resembling the menstrual, and which continued to recur at regular monthly periods. There was no discharge from the vagina. A tumour was discovered at the lower part of the abdomen, which he concluded to be ovarian. This tumour was first noticed about two months after the first discharge from the rectum. The disease of the ovary he thought sufficient to account for the vicarious position of the seat of the discharge. She had no

suspicion of pregnancy. In a short time she was dismissed the hospital with a recommendation to her medical attendant that paracentesis might be performed when it became necessary.

Dr. Cowan, at a subsequent meeting, candidly acknowledged that his diagnosis in this case was incorrect; that she had been delivered of a healthy child, and that all trace of tumour had disappeared. The importance of this case in a practical point of view cannot be overrated. If one, who can bring to his aid all the accomplishments of general and physical diagnosis, commits such an error, or rather I would say, such an oversight, how cautious should another be who may be less able and less accomplished.—*Harrinson's Retrospective Address*, in *Prov. Med. and Surg. Journ.*, July 24, 1844.

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75. *Abortion.*—In fifty cases of abortion, of which Dr. Robert Lee has preserved the histories, uterine hemorrhage took place, he says, in twenty-six. "In forty-six, the detachment of the ovum from the uterus was the consequence of disease in the embryo or its envelopes. In four cases only out of the fifty, could the accident be attributed to an external cause, nor could any change of structure in the ovum be detected. The morbid appearances most frequently noticed in these ova were the following: thickening of the uterine and placental decidua, hypertrophy or atrophy of the placenta, deposits of coagula of blood in the cells of the placenta and of the chorion, the decidua reflexa hard, yellow and nearly impervious, having the canals partially obliterated which pass between the cells of the chorion and decidual cavity. Cysts of the placenta and villi of the chorion, the vesicula umbilicalis shrunk and hard, fluid between the amnion and chorion, an excessive quantity of liquor amnii, the umbilical cord unusually short or long, and firmly twisted, the embryo totally absent or very imperfectly developed, or malformed. Induration and thickening of the decidua, and the formation of clots in the cells of the placenta and of the chorion, were present in a great proportion of these ova, and to these causes the death of the embryo and the premature expulsion of the ovum, were chiefly to be attributed. In some of these cases the entire ovum was expelled with little pain and discharge, and by the uterine contractions alone. In others, the embryo escaped, leaving all the membranes adhering to the uterus, or the embryo was expelled enveloped in the amnion and chorion, and the decidua left behind for days, or even weeks. Not unfrequently the uterine decidua was torn off all round from the placental decidua, and left adhering to the uterus, while the remaining parts of the ovum, covered by the decidua reflexa, escaped.

"In all cases of threatened abortion, the condition of the os and cervix uteri should be ascertained accurately by an external examination; and if the orifice is open, and the neck shortened, and the ovum felt pressing into it, no good can result from attempting to prevent the expulsion of the ovum by anodynes. It is better merely to moderate the discharge, and leave the case to nature. If the os uteri is widely dilated, and the ovum has nearly escaped, it may at once be removed by the fore and middle fingers of the right hand. But this should not be attempted, unless there is the greatest probability of extracting the ovum entire. Where the ovum remains entirely within the uterus, and there is a profuse discharge of blood, one of the most effectual means of checking this is to pass a large, soft, dry sponge covered with lard into the vagina, which can easily be done in all cases, and firmly pressed up against the os uteri. This does not interfere with the application of cold to the hypogastrium and external parts, nor with the internal exhibition of acids, lead, ergot, or whatever else may be thought requisite; and the sponge in the vagina not only checks the hemorrhage, but it has an influence in exciting the contractions of the uterus, and closing the vessels from which the blood is flowing.

"I have recently been informed that premature labour may be induced by the same means, without forcing the sponge into the os uteri. I have had no opportunity of trying this method, but if it should always be successful in bringing on labour, there can be little doubt that it will possess great advantages over all the

other means which have hitherto been employed for this purpose, and which have been described in the third Report.—*Clinical Midwifery.*

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76. *Arm Presentations.*—Dr. Robert Lee records, in his *Clinical Midwifery*, the histories of sixty cases of arm presentation. In a large proportion of these, the operation of turning was undertaken in the most unfavourable circumstances, both for the mothers and their children, after the liquor amnii had entirely escaped, and the uterus had not only been contracting for many hours around the child, but repeated unsuccessful efforts had been made to deliver. Seven women died from rupture of the uterus, and three from inflammation of the uterus. Laceration and inflammation of the uterus are, therefore, the consequences to be dreaded after turning. Four of these cases of rupture occurred in the practice of other accoucheurs, and three in patients under his own care, and where no great difficulty was experienced, or force employed in turning. The most perplexing cases were those in which there was distortion of the pelvis with arm presentation, and the most easy and successful those twin cases in which the superior extremity of the second child presented, and the operation of turning was promptly performed.

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77. *Puerperal Convulsions.*—Dr. Robert Lee, in his *Clinical Midwifery*, has recorded the histories of forty-six cases of puerperal convulsions, of which fourteen proved fatal; five were delivered with the forceps; eleven by the operation of craniotomy, and two by turning. Thirty occurred in the first pregnancy or labour, and in twenty-one the insensibility and convulsions took place before parturition had commenced. A great proportion of the children were still-born, though expelled by the natural efforts. The brain was examined in six of the fatal cases, and in four various morbid appearances were observed in its structure: in the other two nothing unusual was visible. The fits were preceded in some cases by flushing of the countenance, headache, giddiness, drowsiness, depression of spirits, and partial loss of consciousness and memory; in other cases no premonitory symptom was observed. Several of the most severe cases occurred in weak, delicate women who had suffered in early life from hysteria or epilepsy, or had been exposed to great mental anxiety and distress during their pregnancy. In two of the fatal cases, and one which ended favourably, the disease speedily followed the use of stimulants and indigestible food. The fits immediately ceased, or became far less frequent and violent, in eighteen of the women after delivery; in others it had no effect in arresting the progress of the disease. Copious blood-letting was had recourse to in the greater number of cases here recorded, fortunate and unfortunate; but in some nervous women who recovered, depletion was not carried to the extent usually considered requisite in this affection.

Dr. Merriman has seen forty-eight cases of puerperal convulsions, of which eleven ended fatally; Dr. Ramsbotham twenty-six, ten of which were fatal; Dr. Collins thirty, five fatal; Dr. Ingleby thirty-five, eleven fatal; Madame Lachapelle, sixty-one. I cannot tell how many of them recovered.

The whole history of the phenomena of puerperal convulsions leads to the conclusion that the disturbed state of the brain depends upon the peculiar condition of the nervous system of the gravid uterus in the latter months of pregnancy. The dissections which I have made of the unimpregnated uterus, and of the gravid uterus in the third, fourth, fifth, sixth, seventh and ninth months of pregnancy, and after delivery, demonstrate that it possesses a great system of ganglia and nerves, which enlarges with the coats, blood-vessels and absorbents of the organ during gestation, and which returns after parturition to its original condition before conception takes place. It is by the influence of these nerves that the uterus performs the varied functions of menstruation, conception and parturition, and it is solely by their means that the whole fabric of the nervous system sympathizes with the different morbid affections of the uterus. If these ganglia and nerves of the gravid uterus could not be demonstrated, its phy-

siology and pathology would be completely inexplicable, and the causes of puerperal convulsions wholly unknown.

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78. *Singular Osseous Deposit within the Cranium of Pregnant Women.*—In our preceding Number, (p. 174,) we noticed the very remarkable researches of M. Ducrest, in reference to a bony production upon the surface of the cranium in women who have died in childbed, and we now learn from an article in the *Prov. Med. & Surg. Journ.*, from *Omodei's Annali di Medicina*, that Rokitansky, of Vienna, one of the most experienced anatomists of the day, has observed the same production. It had also been previously noticed whilst epidemic puerperal fever prevailed in Vienna in 1834.

In the midwifery hospital at Vienna, from 1827 to 1837, inspection took place of the bodies of 1465 women who died in childbed; and in 1221 of these victims of puerperal fever in all its various forms, there was found a recent thin osseous deposit upon the internal surface of the cranium, mostly of the parietal and frontal bones, nearly toward the basis. Rokitansky is persuaded that this new deposit of osseous matter within the cranium is not connected with puerperal fever, but occurs during utero-gestation, under particular circumstances not yet defined, for he has met with it in those pregnant women who have died suddenly from an accidental cause, before, during, or soon after delivery.

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79. *Scirrhus of Uterus, complicated with Ovarian Dropsy.* By Mr. Elkington.—Mrs. Low, aged 41, a strong, active woman, mother of one child, first felt unwell in January, 1843; she had dyspepsia and pain in her back, which were relieved by tonics, &c. In April she had an inflammatory attack, affecting, she says, the lower part of the belly, accompanied by fever, pain about the pubic region, constipation, and pain in making water. She was relieved by leeches and antiphlogistic measures; she then went into the country and remained there for some weeks. She consulted me on her return in September. I learnt that *whilst she was in the country* she had had swelling of the right leg, which, from her description, was probably phlegmasia dolens; obstinate constipation, pains about the pelvis, and a constant watery discharge from the rectum. She now complains of great difficulty in regulating her bowels, and cannot keep them open without aperients; she says when the motions are figured, they are very small, not thicker than the little finger. She has a frequent watery discharge from the rectum, which escapes generally when she lies down, and to the amount perhaps of a tablespoonful or two each time. Whilst she was in the country she states that she was obliged to get up in the night every ten or fifteen minutes to evacuate the bowels, and that nothing passed but a small quantity of clear water. On examination externally a small circumscribed tumour in the left iliac fossa, about the size of a small orange, immovable and semi-elastic, was detected. On examination per vaginam, I found a firm, inelastic tumour, occupying the greater part of the cavity of the pelvis; it was low down, hard and fixed, and seemed to consist of enlargement of the uterus. It appeared to occupy *anteriorly* more the left side of the pelvis, and the left side of the vagina was puckered, as if adhesions were formed. On examination per rectum, the tumour was found posteriorly larger on the right side, and encroaching very much on the cavity of the rectum, greatly interfering with the passage of the feces. She had very little discharge from the vagina, and that merely an increase of the natural secretion; there were slight tenderness and swelling of the lips of the os uteri. She had lost flesh, and was gradually getting thinner. She suffered from a sensation of weight and heaviness in the pelvis, but not much from pain. The most distressing feature of the case was obstinate constipation. The legs became œdematous; she gradually got thinner and weaker, became dropsical, increasing to a great size in the belly. She died Feb. 2, 1844. The treatment was palliative.

Post-mortem, Feb. 3d. We could only get permission to examine the abdomen. About two gallons of serum were drawn off from the cavity of the peritoneum. On opening the abdomen we found the peritoneum lining the parietes

covered with numerous small tumours, varying from the size of a pea to that of a large marble; the omentum was like a bunch of large grapes; the under surface of the liver was studded with them, and the small intestines had also a sprinkling of them. There were bands of lymph tying the intestines to the parietes: there was also lymph deposited on the liver and spleen. With some difficulty we removed the contents of the pelvis. On examination we found the uterus enlarged and very hard, having the true scirrhous character, the os patulous; the lips swollen, and upon the anterior lip three small ulcerations, the largest about the size of a split pea, and superficial. There is a scirrhous growth from each side of the body, commencing at the upper part of the cervix, and which terminates in a cyst the size of a walnut, filled with serum; the right Fallopian tube is enlarged, hardened, and firmly united with and forming part of the uterine tumour; the left Fallopian tube is united with the surrounding parts; posteriorly, the rectum is adhering to the lower part and middle of the uterus, from which it cannot be easily separated; behind the fundus there is a portion of the ileum adhering; on the fore part the bladder adhered firmly to the uterus throughout, and was with difficulty dissected from it; the left ovary is enlarged to the size of a small orange, forming a cyst filled with fluid; the right ovary has formed a cyst, which has ulcerated, and discharged its contents into the rectum. A probe may be passed from the cyst into the intestine.

It is surprising that she felt so little pain, her sufferings being caused chiefly by her size from the effusion. This case points out the necessity of carefully ascertaining the condition of the uterus in all cases of ovarian dropsy, before attempting any operation for the removal of the ovarian cyst. It clearly shows the co-existence of the one with the other. Which was the primary seat of disease, the uterus or the ovaries, it is difficult to say; but it is probable that the uterus was the first to take on disease, from the extent to which the whole of that organ was affected, and the extensive adhesions formed between it and the adjacent parts. It is probable the reason she suffered so little pain was in consequence of the ulcerative process having so recently commenced. If the ovarian cyst had grown more rapidly, and acquired a larger size before the uterus had become so decidedly diseased, and before the general health had suffered to such an extent, it is possible that an attempt might have been made to remove the cyst. It demonstrates the necessity of great caution and nice discrimination in such cases, as well as the risk and danger of an operation.—*Prov. Med. and Surg. Journ.*, May 15, 1844.

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80. *Uterine Disease.—Mechanical Dilatation of the Cavity of the Os and Cervix of the Uterus, as a means of diagnosis and treatment, in some affections of that organ.*—Professor Simpson first showed the difficulty which exists in ascertaining some of the morbid conditions of the lining membrane of the cervix and cavity, in consequence of the small size of the normal opening into the organ. He pointed out that this opening may, by the use of a succession of *sponge-tents*, be enlarged to such a degree as to overcome, in a great measure, this difficulty. The kind of sponge-tent which Dr. S. has used is made in the manner of that described in most old works of general surgery. The pieces are pyramidal, of various sizes, and have a perforation in their base, to allow of their being temporarily fixed upon a curved wire or bougie, for their ready introduction into the os uteri. The bougie is withdrawn as soon as the sponge is lodged, and in a few hours the latter expands immensely in size. Previous to its introduction, a string is attached to the tent to allow of its easy withdrawal. Under the expanding power of the tent, the cavity of the os and cervix uteri may be dilated, and without any suffering to the patient, to such an extent as to allow the finger to pass a sufficient distance, for the purpose of ascertaining various points of diagnosis, which could not otherwise be arrived at. Dr. Simpson stated that he had employed the same means to facilitate some kinds of remedial and operative interference in this part of the body, such as the removal of those small vesicular polypi that are so frequently clustered upon the interior of the cervix.

In speaking of dilatation of the os and cervix uteri as a means of cure, Dr.

Simpson pointed out the results of this practice in the hands of the late Dr. Mackintosh in the cure of dysmenorrhœa and sterility, connected with normal and inflammatory strictures of the os uteri. His own results had not been so successful as those of Dr. Mackintosh; but he had now seen a considerable number of severe cases in which dysmenorrhœa that had previously resisted all other kinds of treatment, had at once yielded to the mechanical dilatation. Dr. Simpson had found the stricture occasionally at the os internum or opening between the cavities of the cervix and body, and not at the os tincæ. Dr. Mackintosh had effected the dilatation with long straight bougies of different sizes. Dr. Simpson had found them more easily used when slightly curved. He also showed other instruments, one of them like the dilater for the female urethra, which he had occasionally employed for this purpose. These instruments were all of them intended to be left in the os uteri for only a short period, and their introduction repeated from time to time, as in the usual treatment of stricture of the urethra in the male. Latterly Dr. Simpson had in his practice thrown aside these, and used another form of permanent bougie for this purpose, and he considered them to be greatly preferable. These permanent bougies were made of Berlin silver, the stem or part included in the uterine cavity was two inches and a quarter in length, the lower ends which rested in the vagina were bulbed and enlarged to the size of a large almond, and were perforated below for the purpose of being placed on a temporary handle, used in the introduction. One of the instruments was left in the uterine cavity for three or four days, and by that time the part was so much relaxed, that another of a much larger size could, in general, be easily introduced. They could easily be borne without the slightest inconvenience, and, indeed, without the patient being aware of their presence. Dr. Simpson pointed out that this permanent form of bougie altogether gave much less pain to the patient, and less trouble to the practitioner; was more certain and expeditious in its effects, and was especially useful when the surrounding tissues of the lips and cervix were in any degree indurated. Obstructed dysmenorrhœa sometimes depends on other circumstances than ordinary strictures of the os. It is sometimes seen in connection with the conical hypertrophy and elongation of the cervix. Dr. Simpson had found it in several instances accompanied with much morbid thickening of the anterior lip of the os uteri, the posterior lip being thin and healthy, and the os stretched out between them of an irregular crescentic shape. In such, and other instances, Dr. Simpson had divided the os uteri on each side to the extent of a few lines with a very narrow knife, or "*lithotome cachèe*," and subsequently kept the part temporarily dilated with the sponge tent. He quoted cases of the perfect success of this simple and safe measure; it placed the parts in something of the same condition as that which they present subsequent to miscarriage; and this latter occurrence is known in general to leave without dysmenorrhœa those who have previously been labouring under that affection, whilst, at the same time, women after aborting, usually soon again become pregnant, there being no such great lacteal determinations to the mammæ, as occur after parturition at the full period, and which seem then usually to interfere with the early repetition of conception.

Lastly, Dr. Simpson offered some observations on the introduction of the sponge tent, into the os of the pregnant uterus, in certain conditions in connection with abortion, and as a means of inducing premature labour. When abortion was inevitable, and the hemorrhage great, a small expanding sponge tent passed into the os uteri, was more effectual than a large vaginal plug. It at the same time opened up the os uteri, so as to allow of the more easy escape of the contents, whilst uterine contractions were, in most instances, ultimately induced by its presence. For the same reasons it was often a valuable means of both opening up the os uteri and exciting the necessary degree of uterine action in those occasionally perplexing cases where, in abortion, the embryo escapes, but the secundines are long retained. Dr. S. had employed the same simple means in inducing premature labour, and spoke of the advantages of it in comparison with the various other measures that had been proposed for that object. He found that the tent, when made and introduced in the mode already stated,

required no vaginal plug or other means to hold it *in situ*. By its use the first stage of labour, or the dilatation of the os uteri, could, in a great degree, be advanced before the labour itself actually began.—*Lond. and Edin. Month. Journ. Med. Sci.*, Aug., 1844.

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81. *Scirrhus of the Uterus.*—Dr. Scott read to the *Medico-Chirurg. Society of Edinburgh*, May 1st, a case of scirrhus of the uterus, in which none of the usual signs of that disease had appeared, but which, two years previous to death, presented all the symptoms of spinal neuralgia, constant cough, without any indication of disease of the lungs, vomiting of food, exquisite pain, almost to fainting on pressure of the spine, and progressive emaciation.

The disease terminated fatally from slight uterine hemorrhage. On examination, the lungs and stomach were found healthy; the uterus was scirrhous and enlarged, but without ulceration. Dr. Scott considered it, in connection with the papers he had formerly communicated to the society, as throwing great light on the subject of spinal neuralgia in general.—*Ibid.*

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82. *Tumours on the Fœtal surface of the Placenta.*—M. Danyan gives two cases of this rare pathological occurrence. His patients were delivered without any difficulty. On the fœtal surface of the placenta, underneath the chorion and the amnios membranes, he found a tumour in one instance 20 centimetres, (eight inches,) in the other 13 centimetres (five inches) in length. The tumours, in both cases, rested on the fœtal surface of the placenta, to which they adhered by vascular ramifications, and by very slight adhesions. The tumours were nourished by vessels proceeding from the umbilical cord itself, and from the vascular network of the placenta. Their tissue was firm, homogeneous, like scirrhous tissue, and grated underneath the scalpel. M. Danyan thinks that these productions were the result of organized sanguineous coagula.—*Lancet*, July 6th, 1834, from *Journal de Chirurgie*.

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83. *Pelvic Inflammation, with Abscess, occurring after delivery.* By John C. W. Lever, (*Guy's Hospital Reports*, April, 1844.) In this very interesting paper, Dr. L. relates nine cases of pelvic inflammation, with abscess, occurring after delivery, and presents some remarks on the disease, deduced from a comparison of those cases.

"1. *Seat and origin of the disease.*—It is difficult to decide whether the disease commenced in the uterine appendages, strictly so called, or whether the cellular structure was primarily affected; but that the cellular is involved, Dr. Lever thinks is very clearly shown.

"2. *Causes.*—This disease may follow an attack of acute inflammation; or it may remain as the sequent of puerperal fever. In the greater number of the previous cases, anomalous symptoms displayed themselves soon after delivery. Cold, falls, blows, &c., are said to have produced the disease. In but two cases were the labours unnatural; in two cases the right side of the pelvis was affected; in five, the left; and in two, matter was evacuated from both sides: in one, the right preceding the left; in the other, the pus was evacuated from the left side externally, and from the right side, through the bowel.

"3. *Symptoms: General.*—The symptoms may commence a day or two after delivery, or they may supervene some days or even weeks after labour. The disease is mostly preceded by rigors, or a sensation of coldness over the surface, followed by heat of skin, quickened circulation, and pain in the region of the pelvis. The febrile paroxysms may remit, but their intervals of recurrence are at varying intervals. The uneasiness and pelvic pain continue, and, as the disease progresses, increase: usually there is some degree of stiffness in the side affected, and not unfrequently pain in the course of the vessels of the thigh and leg: this may proceed to the development of phlegmasia dolens. The pulse is seldom below 100—110: the tongue remains loaded: there are frequent calls to pass the urine, which is scanty and high-coloured: at one time there is con-

stipation of the bowels, at another diarrhœa associated with tenesmus; and the secretion of milk is usually scant, or altogether suppressed.

"These symptoms may continue for an indefinite period; when, if the disease be overlooked, or if the remedies employed do not succeed in checking its progress, they are followed by the attendant signs of suppuration, and the matter may be evacuated either by an artificial or natural opening.

"*Local.*—The patient usually directs the accoucheur to the seat of the affection: in some cases, a swelling is readily seen; in others, there is an appearance of fulness on one or both sides. This will be found very sensitive; and the patient will, with difficulty, be persuaded to allow a careful examination with the hand. When this is done, the whole of the iliac region, on the side affected, may be found of 'a brawny hardness;' sometimes prominent, but usually very tender to the touch. This hardness has, in some cases, been found to extend as high as the umbilicus, and as forward as the linea alba. In other cases, the tumour is seated more deeply in the pelvis; and is then not so readily defined, is less movable, and will bear superficial pressure: but if the hand be pressed deeply into the cavity of the pelvis, the patient will immediately shrink. If a vaginal examination be made, in some cases, nothing abnormal is detected; the canal may be cool; there may be no tumefaction; and the uterus may be moved without inducing great suffering: although, in by far the greater number of cases I have seen, there has been, to use Dr. Simpson's words, 'a morbid permanence of the state of puerperal hypertrophy;' and, as a general rule, it will be found that wherever pelvic inflammation occurs soon after delivery, a long period will elapse before the uterus returns to its original state. In other females, the upper part and side of the vagina will be found hard, tender, firm and inelastic; and, by pressing upon the swelling felt through the abdominal parietes with one hand, and keeping the forefinger of the other in the canal, we are able to satisfy ourselves that the hardness and swelling felt in both situations arise from one and the same cause. Frequently, there is some lateral displacement of the uterus. On examination per rectum, the swelling is, in some instances, found to encroach upon the bowels; and this will explain both the occurrence of tenesmus and hemorrhoids, as well as the occasional discharge of the contents of these abscesses per anum.

"4. *Diagnosis.*—(1.) *From inflammation and abscess of the abdominal walls.*—I have seen three cases of inflammation, followed by suppuration taking place in the parietes of the abdomen, after delivery; this has occurred from a giving way of some of the muscular fibres, or tendinous expansion, during violent efforts. The patients were sensible of the injury, and at the time of its occurrence made great complaint. On the other hand, I have seen abscess of the abdominal parietes occur without any such assignable cause; and it will be well, therefore, to mark the diagnosis between simple abscess of the abdominal walls and those collections of matter which issue from the pelvis behind, and external to the peritoneum, presenting themselves in either iliac region. In the early stage of the latter, the skin, as well as the muscular parietes, may be readily rolled over the tumour; evidently demonstrating their non-connection: while, if the abscess be seated in the abdominal walls, by moving the one we move the other. This method of diagnosis is most satisfactorily applied when the patient is in a prone position.

"(2.) *A morbid permanence of the state of puerperal hypertrophy of the uterus* may be mistaken for pelvic abscess. I have already alluded to the enlarged conditon of the uterus which usually persists in women who have suffered from pelvic inflammation; and I have observed the same circumstance in females who have recovered from puerperal fever. Such swellings are not always confined to the central line, but may extend into either iliac region, and they may be associated with inflammatory effusions into the pelvis. In the diagnosis of such cases, valuable assistance will be derived from the employment of Professor Simpson's uterine bougie: by its aid the situation and size of the uterus may be determined, its mobility or fixity ascertained, and the locality of the inflammatory effusion decided.

"(3.) *Feculent collections.*—In puerperal women we sometimes meet with tumours in either iliac fossa: on the one side arising from a collection of feces in the cæcum; and on the other, from a similar collection in the sigmoid flexure of the colon: and such collections, by an inexperienced and careless observer, might be mistaken for inflammatory swellings. The early period at which they occur after delivery; the tympanitic condition of the abdomen; the frequent expulsions of flatus, both by mouth and anus; the frequent colicky pains; the occasional vomiting; the loaded tongue; the state of the pulse; will enable us to frame a correct diagnosis. And further, upon inquiry, we shall find that for some time the patient's bowels have been in a constipated state; while the exhibition of purgatives, and the administration of cathartic glysters, by their effects will remove all doubt from the case.

"(4.) *Typhlo-enteritis.*—I need scarcely dwell upon the means of diagnosticating pelvic abscess from inflammation of the cæcum, and the cellular membrane external to it. Here the symptoms of intestinal disturbance will be found at the commencement; the constitutional symptoms are more active, and soon become typhoid. The tumour itself also gives to the hand of the examiner a different sensation from that felt in pelvic inflammatory effusions; in the former, also, a "craquement" is frequently detected. Still, it must be admitted, that cases are recorded in which the cæcum and its cellular bed have become secondarily affected.

"(5.) *From abscess behind the flexors of the hip.*—Inflammation and suppuration are occasionally met with behind the psoas and iliacus muscles, and might, by an inattentive observer, be mistaken for the disease under consideration. In the former, however, the pain is more acute, and is increased by the slightest motion of the hip-joint: there is pain also in the knee: the patient lies with her thigh and leg flexed; she cannot allow the limb to hang down; neither can she bear the slightest weight on the foot of the side affected.

"(6.) *From sciatica.*—Dr. Churchill states he has known this affection mistaken for sciatica; but surely, if a careful internal and external examination be made, such an error cannot occur."

5. *Termination.*—This, Dr. Lever remarks, is by *resolution*, but most frequently *suppuration*. 1, The abscesses evacuate themselves, externally; 2, into the cavity of the peritoneum; 3, into the vagina; 4, into the uterus; 5, into the bladder; 6, into the intestinal tube, and 7, into the surrounding cellular tissue.

"6. The *sequelæ* of the disease are: 1. *Immobility of the uterus.* The uterus is bound down, and rendered incapable of expansion; so that if gestation occur, the ovum is prematurely cast off, and in this way may give rise to a succession of abortions. During gestation, brief though it be, the patient suffers much from pain in the region of the uterus, and the abortion is attended with an unusual degree of suffering. 2. An impervious condition of the Fallopian tube. If this exists only on one side, the generative faculty will not be interfered with. 3. *Ovarian disease.* According to Dr. L.'s experience, this is a very uncommon result.

"7. *Treatment.*—In the treatment of this latent affection, our first object," says Dr. L., "should be to procure resolution: for this purpose, heroic measures are not required, as the disease is usually found in patients whose constitutional powers are much depressed, and demand mild and cautious treatment. General blood-letting has not been required in any case that has fallen under my notice; whilst, in most, the abstraction of blood by leeches, repeated, if necessary, two or three times, has been attended with marked advantage: in my opinion, it is better to repeat the application of leeches than to apply a large number at one time. They may be applied either to the seat of pain and swelling, or to the vagina by means of the speculum; whilst the flow of blood may be encouraged by the constant application of warm cataplasms, or the injection of the dec. conii, anthemidis, or papaveris: while blood is thus drawn from the part affected, the milder mercurial preparations should be exhibited in small but repeated doses, but just sufficient to affect the system. Two or three grains of blue pill, combined with the extract of conium, or the hyd. c. creta, with Dover's powder, may

be given each night at bedtime, or night and morning; but the effects of this medicine must be closely watched, for its exhibition must be discontinued so soon as the red line is seen along the margin of the gums. While pursuing this plan of treatment, the secretions should be attended to; the kidneys must be kept in action; the bowels free; and at the commencement of the disease, diaphoresis may be promoted.

"From the record of the cases it will be seen that the patients frequently suffer from distressing tenesmus: this may be remedied by the use of the enema amyli, to which some syrup of poppies or tincture of opium has been added; or by the introduction of an opiate suppository.

"In some cases, notwithstanding the early employment of legitimate means to effect resolution, and in others, from the first moment of our being called in, the symptoms plainly indicate the formation of pus. And here our object should be twofold: 1. The promotion of suppuration and evacuation of the matter; and 2dly. The maintenance of the constitutional powers.

"1. The first object will be accelerated by the continued application of medicated poultices and fomentations, which soothe the pain and lessen the patient's sufferings. When the symptoms plainly indicate the formation of matter, and fluctuation is evident, the abscess should be opened: this may be done externally, through the abdominal parietes; internally, through the vagina, by means of the speculum and a guarded lancet; or through the rectum by means of a trocar, as in Dr. Simpson's case.

"M. Martin recommends the application of caustic potass to the abdominal parietes, for the double purpose of having an external opening, and securing previous adhesion of the containing sac to the abdominal walls. This method of practice appears to have been very successful in his hands; but still there are cases to which its inapplicability must be obvious.*

"In some of the cases related, the patient's sufferings would have been diminished had an earlier opening been made.

"2. The constitutional powers must be maintained by a generous, nutritious diet, porter, wine, &c.; the administration of tonics and sedatives.

"Where inflammation takes place in the course of the veins and absorbents, leeching along the line of the inflamed vessels, followed by hot spirit fomentations, will be found of service; taking care, at the same time, to allay pain and irritation by sedatives, and to support the system by mild tonics.

"In some cases, where the inflammation does not proceed so far as suppuration, and in others, where pus has formed and has been evacuated, there will remain considerable induration of the affected structures. Its absorption will be promoted by the exhibition of the pot. iodid. two or three times a day, in the dec. sarzæ c., or the dec. cinchonæ, and by the application of blisters.

"The continuance of nursing is by no means an unimportant question in the treatment. In the majority of cases, the secretion of milk is scanty, and insufficient to satisfy the cravings of the child: If, therefore, we find the patient's strength decidedly deteriorated by nursing, we should at once forbid its continuance, and commit the infant to the care of a wet-nurse; but if, although the secretion be scanty, the patient's health does not appear to suffer, we may permit her to suckle her child."

We may refer, for some further information respecting this disease, to the interesting paper of Dr. Churchill, analyzed in our number for January last. (P. 226, *et seq.*)

* See Dr. Simpson's case, Edin. Med. and Surg. Journal, 1843, pp. 1013—14.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

84. *State of the Arteries and Veins after Death.*—The fact of the arteries being found empty after death, except under very peculiar circumstances, is a physiological or anatomical fact which has been known from the earliest times. It has also been long known that general capillary congestion is one of the first symptoms of decomposition after death. The skin becomes sugillated with red streaks, the conjunctiva is bloodshot and the mucous membrane livid. If the interior of the body is examined, the venous capillaries are everywhere found gorged with blood. The fluid contained in the serous cavities also become tinged with blood, and the larger veins are empty *as well as* the arteries. M. Devergie, in his work on Legal Medicine, (vol. i, pp. 166, 214,) accounts, correctly we think, for these anatomical appearances, by the decomposition of the fluids, the gases developed in the blood-vessels propelling that fluid into the capillaries. M. Devergie's interpretation of the above phenomena is generally adopted by the French medico-legists.—*Lancet*, April 13, 1844. T. R. B.

85. *Poisoning by Lead Shot.*—(*Journal de Chimie.*)—An individual after drinking a few small glasses of "liquor," was seized with violent colic and all the symptoms of poisoning. Dr. Harle, who was immediately called in, on examining the remainder of the liquor still contained in the bottle, remarked that instead of being limpid, it was of a dirty hue. On pouring it into another vessel he found fixed at the bottom, ten lead shots, which had been gradually transformed into carbonate of lead, so that there only remained a very small nucleus of metallic lead in the centre of each. As long as the liquor remained clear, it had given rise to no accident. It was thus evidently the suspension of the salt of lead which had acted as the poison. T. R. B.

86. *Cryptogamic Vegetations on the Mucous Coat of the Stomach after death.*—Dr. Lee describes the appearances found in the stomach and upper part of the intestinal canal of a corpse which had been interred for three months, and then exhumed for medico-legal investigation. The mucous surface of the stomach was of a deep chocolate colour, and on it were scattered numerous white circular bodies, elevated at the edges and depressed at the centre; some of these were very minute and had the appearance of a white powder sprinkled on the membrane. This appearance has been noticed by Orfila, as one of those which had been mistaken for arsenic. Buchner, too, has mentioned a white, granular substance containing fat, which was found lining the stomach. The question arises, what is the intimate nature and origin of these bodies? Are they fungi? They are certainly not calcareous depositions. They are partially soluble in alcohol, and they melt before the blowpipe.—*Dublin Journal.* A correspondent in the *Provincial Journal* found similar appearances in a body which had been interred fifteen months. These particles, examined chemically, yielded the same results as adipocere, of which they probably consist.—*Lancet*, April 20, 1844. Certainly this last is the correct solution. Orfila examined these appearances, (found equally in the stomachs of those who had not been poisoned,) and ascertained that they consisted of fat and albumen. T. R. B.

87. *Cyanol.*—About ten years since, Runge published his researches on the organic bases contained in coal-gas naphtha, and stated that he had discovered no less than six different bodies in it, named *cyanol*, *leucol* and *pyrrol*, and *carbolic*, *rosolic* and *brunolic acids*. Dr. Hoffman, an assistant in the Giessen Laboratory, has recently examined several of the more interesting of these. Cyanol is described as a clear and limpid liquid, of an oily consistency, a slight, agreeable, vinous odour and an aromatic, burning taste. It is in a high degree volatile, evaporating at nearly all temperatures.

Runge mentions that he killed leeches by immersing them in a watery solution of cyanol. Hoffman injected ten grains mixed with three times as much

water into the throat of a rabbit. Violent spasms ensued, with difficult and slow breathing, and a complete prostration of strength. Twenty-four hours afterwards, the animal had not recovered its healthy condition, the breathing was still slow, and the mucous membrane of the mouth highly inflamed. The blood of the killed animal presented nothing remarkable.—*Lond. Edin. and Dub. Phil. Magazine*, February, 1844. T. R. B.

88. *Arsenic Symptoms.*—"Arsenic provokes vomiting, though we never find stercoraceous matters ejected from the stomach under its influence. In fact its action is either confined to the stomach, and in this case the vomiting can consist only of chymous matter, or else it extends itself to the intestines and there produces diarrhœa and dysentery, instead of obstructing the passage of the fæcal matters and forcing it to pass upwards into the stomach. We know of but three cases in which stercoraceous vomiting takes place; a state of *volvulus* or *ileus;* a stoppage of the intestines by insoluble stercoraceous concretions, and lastly, occlusion by the adhesion and folds of large worms, such as the larger lumbrici. I have looked over nearly two hundred volumes of medical journals, with a view of collecting all the cases of poisoning by arsenic, but I have never met with a single one which contradicted these two general laws."—Raspail.—*Medical Times*, November 4, 1843. T. R. B.

89. *Fusel Oil.*—The influence which extraneous substances exercise upon the products of vinous fermentation is strikingly exemplified in the fermentation of potato-mash. It is well known that in the manufacture of potato-spirit, an oily liquid is obtained, besides the alcohol, possessing poisonous properties, a highly disagreeable smell, and nauseous taste; this is called *fusel oil.* It does not exist ready formed in the potato, but is a product of the transformation of sugar, for it is produced not only in the fermented potato-mash, but also in the fermentation of the last syrups obtained during the preparation of the beet-root sugar.

This fusel oil belongs, by its chemical properties, to the same class of bodies as alcohol; it is an alcohol from which the elements of water have been separated. Two atoms of fusel oil are formed by the aggregation of five atoms of alcohol, with separation of six atoms of water.

Fusel oil is produced in our spirit manufactories as an accidental and accessory product, in such large quantities that it is used for lighting the buildings.—*Liebig's Lectures, Organic Chemistry*, in the *Lancet*, May 18, 1844.

Some remarks on the same subject, but not so explicit, will be found in the author's Agricultural Chemistry. Has no other chemist noticed this product?
T. R. B.

90. *Caution in giving Albumen as an Antidote.*—Practitioners, in employing albumen as an antidote to corrosive sublimate, should be aware that it may be given in too great quantity, as the compound formed is soluble in an excess of albumen, and in the deleterious combination which enters the blood, producing the remote influence of the poison. So long as the vomited matters contain a white opaque material admixed, the antidote should not be withheld; when the *ejecta*, on the contrary, become transparent, the further employment of the remedy is generally useless, and may be injurious.—*Dub. Med. Journ.* T. R. B.

91. *Gun-Shot Wounds.*—Lord Eldon, late in life, told this striking story of an assize scene to one of his daughters. "I have heard some very extraordinary cases of murder tried; I remember, in one where I was counsel, for a long time the evidence did not appear to touch the prisoner at all, and he looked about him with the most perfect unconcern, seeming to think himself quite safe. At last, the surgeon was called, who stated that the deceased had been killed by a shot, a gun-shot, in the head, and he produced the matted hair and stuff cut from and taken out of the wound. It was all hardened with blood. A basin of warm

water was brought into court, and, as the blood was gradually softened, a piece of printed paper appeared—the wadding of the gun—which proved to be half of a ballad. The other half had been found in the man's pocket when he was taken. He was hanged."—*Twiss's Life of Lord Eldon.* This is probably the same case that is mentioned by Dr. Gordon Smith in his "Forensic Medicine," as having been referred to by the lord chancellor in the House of Lords during a debate in 1820. T. R. B.

92. *Action of certain Essential Oils.* By Professor Mitscherlich.—From experiments on animals it appears that these oils pass into the circulation, and that they are eliminated by the lungs, and partly also by the kidneys. The following are some of the details, with the appearances on dissection, &c.

1. *Volatile oil of Mustard.*—It is a violent poison, and kills animals in a shorter space of time than any of those hereafter enumerated. It causes a local inflammation, not, however, very powerful, of the intestines, detaching the epithelium, but not causing any alteration in the arrangement of the cellular tissue. It is absorbed, and its odour allows of its presence being easily detected in the abdominal cavity and in the blood. It is partly rejected by the pulmonary exhalation, and, in this case, it communicates to the urine an odour of horseradish. In cases of poisoning by this oil the muscular irritability remains a long time after death.

2. *Volatile Oil of Savin.*—A violent poison, but does not kill so quickly as the oil of mustard. It is absorbed, and may be recognized by its odour in the abdominal cavity and in the blood. It is partly thrown off by the pulmonary exhalation, and partly also by the urinary secretion as its odour demonstrates. It occasions, even in mortal doses, very little change in the intestinal canal, and only congestion in the blood-vessels, which are distributed in the jejunum with a detachment of the epithelium. Its action on the veins is such, that, after death, these organs are gorged with blood; and, in one case, cylinders might be observed in the urine which were probably formed by the internal membrane of the urinary canals of Bellini. The muscular irritability remains long after death, and the heart, whose cavities are gorged with blood, gives pulsations for a long time.

3. *Volatile Oil of Carraway.*—A violent poison, but weaker than the two last. It is absorbed, as is shown by its odour, in the abdominal cavity. It is partly thrown out by the pulmonary exhalation, but the urine does not give any indication of it. It determines changes of structure in the stomach and jejunum, but without producing inflammation in them, or even congestion of blood.

4. *Volatile Oil of Fennel.*—Poisonous, but less so than the preceding; absorbed and rejected in part by the lungs, but not by the urine. Its effects on the intestinal canal are similar to those from the oil of carraway.

5. *Volatile Oil of Turpentine.*—A much weaker poison than the four preceding. It is absorbed, passed out by the pulmonary exhalation, and, as is well known, gives a peculiar odour to the urine. In the experiments of Professor Mitscherlich, it did not cause inflammation of the stomach, but a very peculiar change in the structure of that organ, with a considerable detachment of the epithelium, and formation of bloody phlyctenæ. This detachment of the epithelium extends to the large intestines, (differing in this respect from the previous poisons;) and it is thus that it gives rise to purgation and to alvine evacuations of a mucous nature. —*Chemist*, July, 1844, from *Journal de Chimie Médicale.* T. R. B.

93. *Legal Accountability of the Deaf and Dumb.*—The following extraordinary, because *untrue*, statement is made in the *Foreign Quarterly Review* for July, 1844:—

"It was under the Restoration, also, and in 1826, that, in the cases of Nadeau and Fillerou, both deaf and dumb prisoners, that Charles Ledru, (in France,) first raised the question as to how far the penal law was applicable to a deaf and dumb person without instruction. This medico-legal question was treated by M. Ledru with great general ability and enlarged physiological views. Both prisoners were acquitted. Mr. Cockburn did not disdain to use many of the

arguments of M. Ledru in his able and ingenious defence of Daniel M'Naughten, at the Central Criminal Court."

It is quite sufficient to add that the subject in question was discussed with great ability before the Scotch Courts in 1807. T. R. B.

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94. *Poisoning by Oil of Bitter Almonds.*—There is a substance sold by druggists, under the name of *Ratafia*, which consists of one drachm of the oil to seven drachms of spirit. Hence about seven drops of the essential oil of bitter almonds are contained in each drachm of *Ratafia*. It is used for culinary purposes—to flavour custards, &c. A child, eight years and a half old, took about a teaspoonful. Mr. Smith, of Clifton, was sent for immediately after the accident, and found no pulse in the arms, but the carotids beat quickly and fully. The face was of the usual tint, but the extremities were almost bloodless. There was no spasm of the extremities—the limbs were completely lax, the eyes closed, but the pupils dilated, and the jaws firmly clenched. No stertorous breathing. The eyes had a brilliant, glassy appearance, mere physical brilliancy without mental expression. Lastly, there was perfect insensibility.

Cold water had been thrown over the arms before the arrival of the physicians. A mustard emetic was given, and, immediately after, brandy and water, with aromatic spirit of ammonia. The last was repeated at short intervals; vomiting shortly followed of matters strongly smelling of Prussic acid. Spirits of ammonia were also rubbed on the chest. The pulse returned gradually in about twenty minutes, and after that the symptoms became more and more favourable until she completely recovered.—*Lancet*, June 8, 1844. T. R. B.

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95. *Mesmerism!!*—Worship Street, London.—On Monday, a young man, named William Bowen, was charged at this office with stealing a linen sheet. The prisoner, who had a somewhat pensive expression of countenance, of a death-like paleness, was supported at the bar by a young man somewhat older than himself, and who was stated to be his brother; his eyes were entirely closed, and he had every appearance throughout the examination of being in a profound sleep. The police officer stated that he was sent for on Saturday night to a pawnbroker's, where he saw the prisoner, who had just before presented the sheet produced for pledge, and which, the pawnbroker suspecting had been stolen, had determined to give him into custody. The officer found that the sheet had been stolen from the prisoner's landlady, who was a laundress. Mr. Bingham, the magistrate, noticing the appearance of the prisoner, asked him if he understood the nature of the evidence against him. The prisoner took no notice of the question, but remained entirely motionless and silent, and seemed to be in a state of total insensibility. Mr. Bingham inquired if any one could give an explanation of the prisoner's extraordinary conduct. Sergeant Lambert said he could, partially. Almost immediately after the prisoner had reached the station on Saturday night, and had given a true description of himself, he appeared to receive a slight shock, and then fell into his present state of somnolency, in which he had remained ever since. No notice was taken of it for some time, thinking he might be sleepy, but as it at length became manifest that it was not the effect of fatigue, great alarm was excited lest he should be dying, and Mr. Coward, the divisional surgeon, was sent for and promptly attended, but after being with him a considerable time, went away, declaring he could do nothing for him. At length, one of the officers entered the station, to whom the prisoner's family was slightly known, and suspecting, from the circumstance of one of his brothers being a lecturer on mesmerism, that he might be in a mesmeric trance brought on by the position in which he was placed, the brother was sent for to get him out of it. On coming to the station, the brother expressed his inability, after a few experiments to relieve him, but entered into conversation with the prisoner, who answered the questions put to him readily, although he continued apparently in a sound sleep. The only question put by the brother at the station, that the sergeant could recollect, was as to when the prisoner felt he should come out of his trance, to which the answer was, as he

understood it, "Saturday week, eight in the evening," corresponding with the hour at which he was taken into custody. The prisoner had not taken the slightest nourishment, either liquid or solid, since he had been locked up, nor expressed a wish, either verbally or by gesture, for any thing. Mr. Bingham said, that under these circumstances, he should remand the prisoner. The prisoner was then supported out by his brother and one of the officers, but in precisely the same state as when he entered the room.

The young man was again brought up on Tuesday, and having then recovered from his state of mesmeric coma, the case was gone into and satisfactorily proved. A person who stated himself to be the prisoner's brother, stepped forward, and, with great gravity, said his brother was a person peculiarly susceptible of the influence of mesmerism. If he looked steadfastly at any particular object, he was sure to be thrown into a state of mesmeric coma, which deprived him of the use of his natural senses. The mesmeric influence operated in different ways upon him, for, on a former occasion, when the prisoner was so affected, he manifested a disposition to destroy every thing that came in his way, and his friends were obliged to put him under restraint. His late visitation was produced by some object to which his attention was riveted last Thursday evening at the Surrey Theatre, and his friends, who observed the fit approaching, exerted themselves without effect to avert it, as they knew that he was unconscious of what he did when under its influence. *It was urged that the prisoner was in a state incapable of judging between right and wrong when the offence was committed.* Mr. Bingham could not listen to such an excuse. He required the prisoner to pay a fine of 20*s.* for unlawfully pawning the property, and also 2*s.*, the amount received upon it, or be committed in default for 21 days to the House of Correction.—*London Atlas*, Feb. 24, 1844. T. R. B.

96. *Manchineel Tree.*—"The common stories about the fatal shade of this tree are as fabulous as the changing colours of the dying dolphin. The *shade* is as harmless as any other shade. The fact is, the juice of the manchineel is highly corrosive and easily extracted, so that rain water or heavy dew will contract upon the leaves or branches so much of the poison as would certainly blister any flesh it fell upon. The manchineel is very fine timber, and the negroes usually smear themselves over with grease when they are about to fell it. It is also a common trick with them to blister their backs with the juice in order to excite the compassion of those who mistake it for the effects of beating."—*Henry N. Coleridge's Six Months in the West Indies.* T. R. B.

MISCELLANEOUS.

97. *Vaccine Virus.*—M. James, in a memoir read to the French Academy of Sciences on the 8th of July last, maintains that the renewal of the vaccine virus at remote periods is far from being so advantageous as the regeneration of the virus. In fact, he remarks, although the spontaneous appearance of cow-pox in the cow is by no means so rare as has been supposed, we are never certain of being able to meet with it at the moment we want it, and on the other hand it is known that the first vaccinations with virus from the cow expose to accidents of which the early vaccinators frequently complained. These inconveniences do not present themselves when the virus is regenerated, a method which consists in returning the virus to a heifer, after transmitting it through a few human systems, and then taking it from this animal and employing it for a new series of human beings. This method, he asserts, preserves the virus in its necessary degree of activity, to protect the system effectually from small-pox, without exposing to the accidents which occur when the virus is taken directly from its source. M. James claims to be the originator of this suggestion.—*Comptes Rendus*, July 8, 1844.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Anaplastic Operation for the removal of a deformity caused by a hole in the forehead left by syphilitic necrosis of the whole external table of the os frontis. By JOHN WATSON, M. D., one of the surgeons of the New York Hospital.

Hugh McCabe, a native of Ireland, a carpenter aged 42, was admitted into the N. York Hospital, April 19th, 1844, with necrosis of the os frontis of six years' standing, probably the result of syphilis which he contracted some twenty years ago, but of which for many years past he had supposed himself entirely cured. According to his own account, the disease on the forehead was the result of a local injury.

At the date of admission, a large ulcer, exposing a considerable portion of the os frontis, existed on the forehead. The greater part of the external table of the bone had already exfoliated, and was held in place merely by the over-lapping of the soft parts. A fistulous opening existed at the upper border of each orbit, and another on the left temple, and through these there was a considerable flow of purulent matter. The upper eyelids were somewhat elevated and deformed by adventitious adhesions around these fistulæ.

A few days after admission, the exfoliated portion of bone was removed by Dr. J. K. Rodgers, who, in order to effect this removal, was obliged to increase the size of the opening by a short incision in the scalp at the upper and left angle of the ulcer. The undermined integuments, now deprived of support, rolled in upon themselves, turning a portion of the hairy scalp inwards upon the face of the sore, and adhering in this folded form along the left border of the ulcer.

On the 1st of June, the date at which I took charge of the case, the central portion of the ulcer appeared to be covered by a sort of cuticular cicatrix. The whole aspect of the forehead was exceedingly disgusting. The cavity was about two inches and a half wide in its shortest diameter; its borders were rugged, abrupt and irregular. A portion of diseased bone lay still exposed and adherent near the upper and right angle of the opening, another under the fold of integuments along the left border. A deep sulcus, exposing some points of diseased bone, existed above the root of the nose. The left frontal sinus was exposed to view, and the rim of bone along its outer and lower boundary was carious. From these several points of diseased bone there was a free discharge of purulent matter. The patient's general health was good. After deliberating for some time on the case, finding the internal table of the bone unaffected, and all the carious portions apparently within reach, I advised the patient to submit to an operation, with a view of removing the diseased bone, and of closing the cavity in the forehead. To this he readily acceded, and the operation was accordingly undertaken on the 27th of July.

After shaving the scalp, and removing the cuticle from the centre of the ulcer by washing it with concentrated aquæ ammoniæ, the operation was

commenced by unfolding the integuments along the left border of the ulcer. This required the free use of the scalpel. A small fragment of bone, which lay buried in this fold of skin, was removed during this first step of the operation.

The next step was to carry the point of the knife completely around the circumference of the opening, and through the whole thickness of soft parts; and to remove a strip of integument varying from an eighth to a quarter of an inch in width throughout the whole of this extent; thus making a smooth and quickened border for the subsequent adjustment of the flaps.

The third step consisted in raising two large quadrilateral flaps, the one on the left and the other on the right side of the opening in the forehead. This was effected by four incisions running somewhat horizontally backwards, nearly parallel with each other, two on each side; one from each upper, the other from each lower angle of the opening;—and afterwards detaching the flaps from the periosteum.

The fourth step consisted in the removal of the diseased portions of bone as far as they could be detected. This was effected mostly by the cutting pliers. The largest of these portions was the projecting rim of bone at the left frontal sinus, the removal of which caused a slight depression over the left orbit. The hemorrhage which had hitherto been rather free, was now checked by the application of ligatures to such vessels as required them. The most obstinate point of issue was from the minute vessels of the glabella, where ligatures were out of the question.

The fifth step was an attempt to approximate the lateral flaps so as to cover the opening. This, however, could only be partially effected. They could be made to meet only to the extent of an inch from their lower edges, even after considerable stretching. The parts thus approximated were secured by two sutures. A large V like gap still existed in the upper part of the forehead.

The next step consisted in an attempt to fill this by a flap from the top of the scalp. For this purpose a free incision was carried from near the upper and right angle of the ulcer, in a curved direction towards the crown of the head. The flap thus made was dissected up and then partially rotated so as to bring its lower and right angle downwards on the centre of the forehead. In this way the remaining deficiency of integument was effectually supplied. The approximated edges were now brought into exact adaptation along the whole of the lines of incision, by numerous points of suture. No part of the wound was left gaping. The sutures were strengthened by strips of adhesive plaster, and the forehead was covered with a compress and bandage.

The patient suffered comparatively little subsequent to the operation. During the greater part of the first week he was kept on a restricted diet. The dressings on the forehead were kept wet with cold water. This had no effect in detaching the adhesive straps, and was exceedingly grateful to the patient. The first dressings were removed on the sixth day. About three-fourths of the lines of incision had united by the first intention. A few of the sutures were removed and the wound was dressed as before. At the second dressing, on the 9th or 10th day, cicatrization had progressed somewhat further. The lower angle of the upper flap had not adhered, and it had receded somewhat, so as to leave a small gap about the size of

a shilling in the middle of the forehead. All the remaining sutures were now removed, and replaced by simple adhesive straps.

Subsequent to this period, although the central gap increased slightly in size, the integuments around it became attenuated and cicatrized firmly to the parts beneath, so as to leave very little depression. The patient left the hospital about five weeks after the operation, at which period the wound had entirely cicatrized with the exception of a pupillary opening which communicated with a small point of carious bone that had escaped notice during the operation, and that had not yet exfoliated. This opening was at the upper and right angle of the original cavity, and was seated on the hairy scalp, so that as the hair grows it will become entirely hidden, provided it is not soon allowed to cicatrize by the exfoliation of the point of bone beneath it.

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Case of Extirpation of a Fibrous Tumour by the large peritoneal section. By Washington L. Atlee, M. D., of Lancaster, Pa., Professor of Medical Chemistry in the Pennsylvania Medical College, Philadelphia. [Extract from a letter to the Editor.]

"Dear Sir:—In accordance with your request I herewith transmit a few hasty notes of the cases referred to while in Philadelphia a few days ago, with a promise that they will be reported in detail for the January No. of your Journal.

"Miss P....., a highly respectable and intelligent lady, aged 24 years, residing in Coleraine township, Lancaster county, called upon me in June last. After examining the patient myself, and in company with my brother, at different times, I informed her of the practicability of an operation, and advised her of all its dangers. She came to Lancaster on the 26th of August to have the tumour extirpated, and I performed the operation on the 28th ensuing. The incision extended from the umbilicus to the pubis, being 7 or 8 inches long. Most of the small intestines, 10 or 12 inches of the transverse colon, and a large portion of the omentum gushed out, which, in connection with violent retching, gave us a great deal of trouble in the subsequent steps of the operation. The tumour, having no adhesions, was soon dislocated and thrown out upon the abdomen; but was found to be almost sessile upon the right side of the uterus, and adhering to it by a solid, resisting, and highly vascular pedicle, about $1\frac{1}{2}$ or 2 inches thick and $1\frac{1}{2}$ inches long, diminishing as it approached the uterus. This was properly secured with strong ligatures—the tumour severed—the intestines returned—the wound closed with 15 hare-lip sutures, and the patient put to bed. Acute peritonitis supervened, which was overcome by venesection, vesication, leeching, laxatives and enemata. Some of the ligatures came away on the 8th of this month, and all the rest on the 18th. On the 15th the patient commenced riding out, and has continued to take carriage exercise daily since. Her menses returned on the 17th, the exact time for their appearance. She has now quite recovered, and will leave for home, a distance of 24 miles, day after to-morrow. The tumour is very dense and solid, and of a fibrous character, and weighs 1 pound 13 ounces.

"My brother's operation, performed last Friday, is likely to be successful. He will write to you in a few days."

Lancaster, Sept. 23, 1844.

Case of Anasarca, from Disease of the Heart.—First sound only heard. Autopsy—Hypertrophy of the left Ventricle, with Ossific and Cartilaginous Depositions in the Aortic Valves. By GEO. SPACKMAN, M. D.

J. W., a tavern keeper, aged 56, of temperate habits, sallow complexion, medium height; a stone-mason by trade, which he followed until the last fifteen years, of remarkable strength, and accustomed to lift great weights, applied to me in the middle of June, 1843, complaining of palpitation and difficulty of respiration on exertion; also of loss of appetite and occasional pains in the epigastric region, some pain in the right side, and some tenderness on pressure over the stomach; no œdema. He never complained of headache, his urinary secretions were apparently healthy, but his pulse was irregular, labouring and slow. He was at this time attending daily to his business. Never had the rheumatism to his knowledge, but was subject to constipation and flatulency. Percussion over the præcordial region gave a dull sound, and the impulse of the heart was very strong, but percussion over the lungs imparted no peculiar sound to the ear. Upon applying the stethoscope to the left side of the chest, between the third and fourth ribs, a rasping sound was heard; on the sternum, opposite the cartilages of the third ribs, the first sound was rough, rasping and whizzing, but the second sound of the heart was inaudible. These sounds were heard along the course of the carotids; the abnormal sounds and impulse were of a very singular character, and reminded an observer of the "sounds produced by the struggling of a drowning animal." At the apex, the sounds were diminished in intensity, but no second sound existed. Calomel and rhubarb were ordered in a cathartic dose, with five drops of tinct. digitalis every three hours, rest, and light diet. The patient himself looked upon his case as one of dyspepsia and organic disease of the heart. Two days after he was much better; had less palpitation, and his pulse was not so full, but it was irregular and intermittent. I directed him to eat beef, mutton and rice, and drink cold water, and left the following prescription:—℞. Rad. gentianæ, ʒij; Rad. valerianæ, ℥ss; Bicarbonate of soda, ʒiii; Aquæ bullientis, Oj.—Misce. A wineglassful to be taken after each meal. I also directed him to keep his bowels open with rhubarb. At this time he could go up and down stairs with but little difficulty of breathing, and slept with his head moderately low. I did not see him again until I was sent for on the 2d of July, when I found him complaining of pain in the region of the heart, great soreness in the epigastrium, and cough, with mucous expectoration, tinged with blood.

I had him cupped over the region of the heart and stomach, but did not bleed him, for venesection seemed to be contra-indicated by the irregularity and feebleness of his pulse, and his pale, sallow, and even bloodless appearance. A blister was applied over the heart, and kept open; and, as the patient was much troubled with flatus and other dyspeptic symptoms, the treatment was directed again to that, because it seemed to be the most urgent, and resulted, as I believed, from the organic disease of the heart. He was ordered to take of the bicarbonate of soda, a small teaspoonful in a wineglassful of ginger tea, with ten drops of the aromatic spirits of ammonia, every three hours; also, small doses of mass. ex. hydrarg., gr. iii., at night, and rhubarb in the morning.

Being convinced that the disease was hypertrophy, with some disordered valvular condition of the heart, and that it was a fixed organic affection, which must, ere long, terminate in the death of my patient, I requested a consultation, and my friend, Dr. S. G. Morton, met me on the morning of the 6th, when, after a careful examination of the case, he pronounced it to be hypertrophy, with ossification of the valves of the aorta. He was particular in calling my attention to the blowing, rasping and thumping sounds, resembling the struggles of a drowning animal. Camphor tea and Hoffman's anodyne were directed, in conjunction with other remedies, to relieve the difficulty of respiration, and calm the spasmodic pain about the heart. From the 7th to the 15th, same medicines continued, when my patient thought himself better; heart not so active; soreness of epigastrium gone; bowels open; pulse irregular, but the rasping and blowing sounds of the heart still remaining, and the urine scanty, with a little œdema in the ankles. I ordered at this time, Salis diuretici, ʒij; Sup. tart. potassæ, ʒij; Aquæ, oss.—Misce. A tablespoonful to be taken every two hours, with the addition of thirty drops of sweet spirits of nitre. The same treatment was continued to the 21st, when he felt so much better that he took an excursion in a steamboat.

22*d*. Appetite improved; heart more calm; secretion of urine more copious; bowels costive, œdema increasing. I prescribed as follows:—℞. Pulv. jalapæ, ʒj; Sub. tart. potassæ, ʒij. Mft. pulv. No. vi. One to be taken every three hours until they operate.

23*d*. Bowels well opened; feels better. 24th. Œdema increasing. Bandaged his limbs. Directed as a diuretic—Nit. potassæ, ʒii; Bac. juniperi, ʒxv; Vini albi, oj. A wineglassful morning and evening.

25*th*. Hardly any œdema; passes his urine in large quantity, and has little difficulty in breathing. He is cheerful, has a good appetite, still goes out and continues better. On the 29th he went to Cape May and did not return until the 8th of August, when his countenance and spirits were good; pulse unchanged; bowels regular; appetite improved; œdema greatly increased; thighs and ankles swollen very much, and he would not keep on the bandages; urinary secretions free; shortness of breath increased; some cough and bloody expectoration; bowels costive; palpitation greater, and the rasping and blowing sounds augmented. The patient remains in the house, sitting in the rocking chair, and finds great difficulty in getting up stairs.

30*th*. Dr. Morton saw him in consultation with me. Cannot lay down at night; œdema extending; bowels constipated; urine scanty; pulse irregular; sounds of the heart the same; cough the same, with bloody expectoration, and appetite bad. Dr. M. directed hydriodate of potassa, gr. iv. to the ounce. A teaspoonful three times a day; a blister to be applied again over the region of the heart and kept open.

Aug. 3*d*. Œdema increasing; cannot lay down, but sits up all night in a chair, leaning forward; sleep disturbed. No change results from the last medicine. There appears to be no chance of relief and death must soon close the case. I ordered laxatives to keep the bowels open, camphor-tea and aromatic spirits of hartshorn, to act as nervine stimuli; tincture of hyoscyamus in doses of fifty drops, to allay pain and produce sleep, and allowed the patient to eat what he found best to agree with him, and have porter and milk-punch if he wanted it. All active treatment was abandoned and the case left to nature.

Sept. 2d. Skin cold, hands blue, pulse small; has passed no urine for twenty hours and doses all the time. His limbs are enormously œdematous, the centre of the thigh measuring twenty-two inches around. He died, sleeping, without a struggle, at half past eleven, P. M.

Post-mortem examination.—Present, Drs. Morton, Spackman and McCloskey.

External appearances.—Great emaciation, except in the lower extremities, where we found extensive œdema. Chest high and fuller on the left side than on the right.

Pericardium thickened, contained a quart of citron-coloured fluid, devoid of flocculi; *heart* nearly three times the natural size; some chronic adhesions of the *pleura;* semilunar valves ossified; ventricles much enlarged; the parietes of the right in a state of atrophy, that of the left, hypertrophy, being nearly an inch in thickness. The structure was very pale but remarkably dense; the *columnæ carneæ* very large, and the auricles slightly affected. The *liver* was large and engorged, and gave a grating sensation on cutting; and the *bladder* very much distended.

Remarks.—The preceding case is interesting, from the fact of the existence of a cardiac lesion of great extent unattended by any pain or any great dyspnœa; the only complaint of the patient being of such symptoms as attend upon dyspepsia. To the symptoms of dyspepsia, after existing many years, were superadded palpitations of the heart, and then, for the first time, the cardiac symptoms attracted attention. The case is also interesting as being one which had not been preceded by rheumatism, which, in a vast majority of cases, lays the foundation of cardiac disease. The granular state of the liver is interesting as marking the intimate connection of that organ with the central organ of the circulation.

It will be observed that but one sound of the heart was heard, viz., the first or systolic, the state of the aortic valves being inflexible in consequence of the cartilaginous and ossific deposits in their structure. The absence of the second sound is strong confirmatory evidence of the fact, that the second cardiac sound is due to the closure of the aortic orifice by the arterial column of blood falling back upon the valves during the diastole of the heart.

DOMESTIC INTELLIGENCE.

Alcoholic odour of the fluid in the ventricles of the Brain.—Dr. Bradley, of Illinois, was summoned before a coroner's inquest, held on the body of Samuel Page, as a medical witness. The deceased was found about two miles from the village, in his wagon, with his feet hanging over the foreboard, his body resting upon a bag of grain, and his head upon the bottom of the wagon. He was totally insensible, and his breathing stertorous and difficult. He was taken to a neighbouring dwelling, where he died in about ten minutes. He had been drinking very freely for several days previous, but was not an habitual drunkard. He had left a grocery store a short time previous to being found, partially intoxicated, without mittens or any other "extra over-clothes," though the weather was somewhat below the freezing point.

On dissection, six hours after death, dark fluid blood poured forth from the

sinuses of the brain, to the amount of eight or ten ounces. The brain exhibited excessive vascular turgescence; in the corpora striata, a small amount of sanguineous extravasation was detected, and in the lateral ventricles some serous effusion. Verdict, "death from apoplexy caused by intemperance."

The effused fluid found in the ventricles yielded strongly the alcoholic odours. This was so apparent, that it was readily recognized by every member of the jury.—*Illinois Med. and Surg. Journ.* T. R. B.

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Case of extensive Fracture and Depression of the Skull in which the patient recovered. By D. C. Smyley, M. D., of Pleasant Hill, Ala. (*Western Journ. of Med. and Surg.*, Aug., 1844.)—The subject of this case was a mulatto girl, not quite 8 years of age, who was wounded Jan. 24th, by the falling of the limb of a tree. She was seen by Dr. S. a few moments after the accident, when she was lying on the ground, apparently dead; the heart beat feebly at intervals. The left half of the frontal bone, except a small part which aids in forming the external angle of the eye, was driven in upon the brain, the superciliary ridge pressing down immediately over the eye; the upper portion of the left parietal bone was also fractured and depressed; the fracture was three inches in width, taking the sagittal suture as its upper line, and extending over a part of the occipital bone. Dr. S. first elevated the superciliary ridge, and restored it to its place. This being done, the patient, for the first time, was seen to breathe. She was then taken to the house where dry clothing was provided. Her head, in the next place, was shaved, and reaction having come on to some extent, the depression began to disappear, the contents of the skull forcing out the fragments of bone, which were greatly comminuted. Sinapisms were applied to her extremities, which remained very cold. Her pulse was irregular in volume and beat. She was unable to swallow.

25th. Patient lay in a stupor all night; extremities still cold; considerable vomiting has taken place, with a large discharge of bile; pulse still irregular, and about 87 in the minute. To-day she is able to swallow. Gave three small doses of calomel and Dover's powder in the evening, and ordered an injection during the night.

26th. Rested badly last night; pulse 90, but not quite so irregular. Had two alvine evacuations early this morning, which were decidedly bilious. For the first time had a discharge of urine. Extremities have become warm. Before Dr. S. arrived this morning, half an ounce of blood had been taken, by which rigors were near being brought on. In the evening small portions of morphine and muriate of ammonia were given, which prescription was continued regularly throughout the treatment.

27th. Rested a little last night; skin quite pleasant; pulse 96, and becoming more regular. The head has become much swollen and puffed out, except immediately over the superior posterior angle of the parietal bone. In the evening the patient began to evince some return of intellect. Directed two small doses of calomel and Dover's powder during the night.

28th. Part of the night patient rested well; had one evacuation early this morning; pulse more natural, but still 96. In the evening gave a dose of Epsom salts.

29th. Patient rested very well; had two stools during the night; pulse almost regular at 93. In the evening the swelling and ecchymosis which had extended to both eyes began to abate; corn-meal gruel allowed for nourishment.

The patient continued to improve up to the 4th of February when she was dismissed cured. For six or eight weeks after this time she could not articulate distinctly, and even now cannot pronounce some words intelligibly.

On the day after the accident the wound was not much swollen, and on the slightest pressure with the finger over the fracture a crepitus was distinctly heard as between small pieces of bone. Not the slightest wound was inflicted upon the external teguments. The head on the injured side remains considerably flattened. The superciliary arch of the left eye is also somewhat depressed.

For about fourteen days incomplete paralysis of the right side existed, but has now disappeared. The mind appears clear, but the girl does not answer questions with the same promptness that was natural to her before the accident, and with this there is noticeable some languor in her bodily movements.

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Extirpation of Os Coccygis for Neuralgia. By J. C. Nott, M. D., of Mobile, Ala. (*New Orleans Med. Journ.*, May, 1844.)—The subject of this case, a lady about 25 years of age, had been suffering from derangement of her general health and neuralgia for 10 months before she came under Dr. Nott's care, at which time her condition was deplorable.

Suspecting that disease or displacement of the coccygis had become a source of irritation to one or more nerves in its vicinity, Dr. N. made an examination of the whole spine, and found no tenderness of any consequence until his finger touched the point of the coccyx, when the patient screamed with pain. Dr. N. then proposed extirpation of the bone, to which, the patient consenting, it was performed by making an incision down to the bone and extending from the point upwards of two inches. The bone was then disarticulated at the second joint, the muscular and ligamentous attachments divided, and without much difficulty, the two terminating bones were dissected out. The last one was found to be carious and hollowed out to a mere shell,—the nerves were exquisitely sensitive. The operation, though short, was attended with extreme suffering. For several hours after, the pains were extremely violent, coming on every 10 or 15 minutes, and accompanied by a sensation of bearing down like labour pains. Morphine in large doses, and other anodynes, afforded no relief—but the pains became gradually less frequent and less violent—the wound soon healed, and at the end of a month the local disease disappeared, and the general health was much improved.

About two months after the operation, she was seized a few days after her catamenial period with violent pains in the back, uterus, vagina, neck of the bladder, &c., but *none at the coccyx;* these pains continued for about four days, producing an extreme degree of suffering. Dr. N. gave anodynes internally—used anodyne injections into the vagina and rectum, but they seemed only to aggravate the symptoms. He tried fomentations, blisters, &c. &c., but nothing afforded the slightest relief, except injections of nitrate of silver into the vagina, and this was very partial; the attack seemed to pass off of its own accord. Similar attacks occurred after the two subsequent catamenial periods, and he was induced to suspect some organic lesion of the uterus. On examination, however, he found the uterus healthy, except a little morbid sensibility to the touch—there were, however, several points of the vagina (one the side and part next to the rectum), and the neck of the bladder, exquisitely sensitive, and when touched, she screamed and said these were the seats of her great suffering—when he touched them the pains would dart up to the loins, and all her aggravated suffering be produced. He was then led to the conclusion that these symptoms were all neuralgic and were consequences of the diseased coccyx. He put her on the use of citrate of iron, 5 grains three times a day, and continued it steadily on through the month—the next expected attack did not come on, and he continued the iron twice a day through the second month, when she passed over the second time, and I then discontinued the medicine.

When Dr. N. saw her last, she had been three months without an attack—her health, which was always delicate, had become pretty good, and she was riding about and taking her part in society as usual, after more than a year of seclusion.

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Closure of Urethra from injury of the Perineum—urine discharged by artificial opening above pubes—natural passage restored by operation. By Gurdon Buck, M. D. (*New York Journ. of Med.*, Sept., 1844.)—The subject of this case was a boy 14 years of age, who, four months previous to admission into hospital, had fallen with his legs astraddle upon the edge of an empty flour-barrel. No external wound was produced, but swelling and ecchymosis of the perineum followed, with slight hemorrhage from the urethra and complete retention of urine. Thirty-six hours after the accident the bladder was punctured above the pubes,

and a quart of urine stained with blood was drawn off. The opening, which is still maintained, is situated in the median line, more than an inch above the pubes. Since the injury no urine has flowed from the natural passage, and the attempts to restore it have been ineffectual. With the exception of a knotted induration around the membranous portion of the urethra, the perineum is supple and sound. The orifice of the fistulous opening pouts out and is disposed to scab over; the tissues through which it passes are thickened and hard, and the surrounding surface red. The catheter used by the patient is one of his own fabric, made from the small end of a common reed, shaved down to the size of a goosequill, and is six inches in length. He is obliged to resort to it at least once in three hours, and sometimes as often as once an hour in the day time, and once or twice in the course of the night. When introduced, the instrument inclines a little upward towards the umbilicus. The bladder was ascertained, by examination per rectum, to be habitually distended with the residuary urine that could not be discharged through the elevated artificial opening. A catheter, introduced into the urethra, passed over a callous fold of the lining membrane before it reached the closed portion.

When admitted into the New York Hospital, Oct. 12, 1843, the patient was suffering from a relapse of tertian intermittent, which was cured by the sulphate of quinine. One month elapsed before an operation was resorted to, during which time cautious efforts were made to penetrate the closed passage.

A small-sized conical gum-elastic bougie was first used, but it could not be engaged in the contracted canal. A straight steel sound was next tried, with moderate force cautiously employed, but without effect. At length, on the 13th of November, the following operation was performed. The patient being secured as in the operation of lithotomy, and a full-sized catheter passed down to the closed portion of the urethra, and held steadily in that position, an incision was made in the perineum, along the raphe, of nearly two inches in length, opening into the urethra so as to expose the end of the instrument. A steel sound was then introduced above the pubes into the bladder by the artificial opening, and, with the aid of the finger in the rectum, the end of it was brought forwards and made to press against the closed portion from behind. The catheter was then withdrawn, and, with a narrow pointed scalpel, the closed portion was divided from before backwards, the end of the steel sound serving as a guide to direct the track of the incision. A full-sized catheter was at length passed into the bladder, and a large quantity of residuary urine drawn off, though he had made water just before the operation.

A compress was placed over the perineum and secured by a T bandage, to which the catheter was attached by threads passing through the rings. Special care was taken to attach the catheter loosely to the T bandage, so that there might be no pressure inwardly where the instrument begins to curve.

Inflammation and œdema of the scrotum followed the operation, but was subdued by saturnine lotions, leeches, punctures and incisions. The catheter was not disturbed until the third day after the operation, at which time inflammation had agglutinated the layers of the divided tissues, and shut off the openings in which the end of the instrument might become engaged in replacing it; the parts had also moulded themselves and acquired a degree of firmness, so that, in returning the catheter, it passed easily through them into the bladder. After the first removal, the catheter was changed every day or two, as the case required.

Dr. B.'s experience leads him to prefer decidedly a silver catheter to a flexible one, as giving more steadiness and support to the parts.

The wound above the pubes was closed on the 15th of December, and that in the perineum had healed on the 12th of January. For some time the patient had worn a full-sized catheter at night only, and he is now able to retain his urine the full time without dribbling. On taking his discharge, he was directed to continue the use of the catheter at night, in the same manner, for three or four weeks; after which, to wear it an hour only at bedtime as much longer, then to intro-

duce it simply once in twenty-four hours, and afterwards two or three times a week.

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Epidemic Erysipelas in Delaware County, Pennsylvania. By Jesse Young, M. D. (*Medical Examiner*, Sept. 7, 1844.)—Dr. Young states that during the spring and early part of summer of the present year, a severe form of erysipelas prevailed in Delaware Co., Pennsylvania. During a period of more than three months, scarcely a case of disease occurred in his practice or in that of several of his neighbours which did not, in some part of its course, manifest decidedly erysipelatous inflammation. It generally came on with the usual symptoms of catarrh; which frequently continuing some days before medical advice was sought, the patient would be attacked with a severe and protracted rigor, succeeded by fever and violent pains of the head, back and bones; with great restlessness and tossing about; the pulse, for the most part, less disturbed than could be supposed from the first sight of the patient; the tongue generally covered with a slimy-yellowish coat; clamminess of the mouth, which, in a few days, if the disease was not arrested, passed to a dry, brown, and in many cases verging to a black appearance.

There was mostly a remission of the fever, pain, &c., in the morning, but during the remission the patient would complain of extreme wretchedness, with considerable prostration of the vital powers. After this state continued three or four, and frequently seven or eight days, (but without any regularity in this respect,) an erysipelatous inflammation would become observable on some portion of the surface, often on the head and face, but frequently on the extremities or some part of the body. When it came out fully, and remained on the surface, the case was generally more manageable than when it made its appearance in patches for a short time, and then receded, which it was very apt to do. When this happened, the patients, I believe, rarely recovered. No matter what plan of treatment was pursued, the progress of the disease appeared to be onward; and the patient, after suffering almost indescribable torture, for perhaps ten or more days, sunk, worn out and exhausted by the efforts of nature to overcome her too powerful antagonist.

In these cases, when the efflorescence came to the surface and remained there, the patient generally got well, after a protracted course of treatment, varying from one week to three or four.

In the commencement of the epidemic, some practitioners made free use of the lancet; but this was afterwards discontinued from the fact, that some patients sunk rapidly after it; and in some others who ultimately recovered, the physician could not determine satisfactorily whether the bleeding was attended with any good, or whether it did not in reality do harm, by inducing prostration, which required all his energies and skill to overcome. All united in opinion, after becoming familiar with the disease, that venesection was a dangerous, or at least a very uncertain expedient.

The course of treatment found to be most efficacious was, emetics of ipecac. and tart. ant. combined; afterwards cathartics of calomel followed with jalap, or some other article in a few hours; and after free evacuations in this way, mild diluent drinks of whatever kind of herb teas was most convenient. Under this mild course of treatment, with the application of *raw cotton* to the inflamed surface, the patients were generally conducted to a safe and speedy cure.

Where, however, the physician was not called early, frequently it ran on from day to day until great prostration ensued, and sometimes the erysipelatous surface took on a dark, livid appearance, and gangrene, with extensive sloughing, ensued.

Here, tonics, with powerful stimulants, became necessary. But this state of things was not apt to result, if medical aid was solicited in the commencement, and the above-indicated anti-perturbating plan of treatment was at once instituted.

Quite an unusual number of deaths occurred among us, but the most of them took place in the early part of the epidemic.

Hare-Lip and its Treatment. By Dr. S. P. Hullihen, Wheeling, Va. (*American Journal and Library of Dental Science*, June, 1844.) Dr. H. is decidedly in favour of operating early on infants, and states that he has operated on thirteen cases before dentition had commenced; three infants of this number were only four weeks old; and he has yet to witness the first untoward event, or the slightest unfavourable indication resulting to an infant from the operation.

In all cases where hare-lip is accompanied with a cleft of the alveolar and palatine arches, he advises the following preparatory treatment for the purpose of restoring the alveolar arch to its proper form before attempting the operation for hare-lip. This treatment consists in the application of a strap of adhesive plaster, cut of such a shape as to cover each cheek, and with a narrow strip to pass over the lip. Each end should be left as large as the size of the cheek will permit, and slitted at different places, so that it may adhere smoothly and firmly. The part required to pass over the lip should be somewhat less than half an inch in width, the edges of this part being doubled over and fastened together, in order to give it the necessary strength and stiffness.

The strap may be applied in the following manner:—"After being properly warmed, one end should be quickly and well adhered to the cheek of one side, then, pressing both cheeks forward, and passing the strap over the upper lip, close to the nose, it should be adhered in like manner to the cheek of the other side. By thus confining the cheeks forward, a force is obtained and exerted upon the jaw, sufficiently great to close in a few weeks the widest cleft of the alveolar arch, and at the same time to correct any projections of its process. The strap should be kept perfectly tense. It is therefore necessary to tighten it every day or two, which may be done by cutting a small portion out of the narrow part, and then sewing it together, without disturbing its adhesions to either cheek. In this way, the same strap will last for several days, and is so easily tightened that its management may be safely entrusted to the parents of the child. As the wearing of the strap never excoriates the parts, nor produces the least pain to the infant, however young, it is advisable to apply it as soon after birth as possible, as a cleft in the alveolar arch is more easily closed at this period than at any other; and as the strap is always of very great assistance to the infant in taking its food. In cases of simple hare-lip, without any cleft in the alveolar arch, the use of the strap will enable the child to nurse at the breast with but little if any difficulty."

The time generally required to close a cleft of the alveolar arch, Dr. H. says, depends more upon the age of the infant than the size of the cleft. In a case in which the cleft was an inch in width, and where Dr. H. applied the strap the day after the birth of the child, the edges of the alveolar process were brought together in three weeks.

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Needle in the Gall-bladder. By J. Allen Tebbetts, M. D., of Andover, N. H. (*Boston Med. & Surg. Journ.*, Aug. 7, 1844.)—A boy, two years of age, who had previously been remarkably healthy, was attacked with abdominal disease, the exact character of which it is impossible to learn, so imperfectly is the case recorded, but which terminated fatally in about ten days. On examination after death, "the stomach and small intestines showed appearances of congestion, with sligh tinflammation. The spleen, pancreas, kidneys, bladder and large bowels, appeared perfectly normal. The liver was nearly twice as large as natural, highly congested, and also showing some appearances of inflammation. The gall-bladder was distended to more than twice its original size, with very dark-coloured bile, and containing a common sewing needle, highly polished, about one quarter part of its length (the pointed extremity) being gone. There was no appearance of the needle being corroded, the point merely showing signs of recent fracture. The inside coat of the gall-bladder was completely disorganized, from the inflammation which the needle probably produced. The examination of the brain and thoracic organs was not continued. When or how the needle came there is altogether unknown."

New volume of Professor Chapman's Lectures.—We are happy to announce that another volume of these valuable lectures has nearly passed through the press, and will be published in a few days. This volume contains lectures on the various exanthematous fevers, hemorrhages and dropsies, and on diabetes, gout and rheumatism. These are important topics, and they are undoubtedly ably treated.

—

The American Journal of Insanity.—This is the title of a Journal, the first No. of which was published in July last. It is edited by the officers of the New York State Lunatic Asylum, Utica, and its object is "to popularize the study of insanity—to acquaint the general reader with the nature and varieties of this disease, methods of prevention and cure." It is to be issued quarterly, each number to contain 96 pages, subscription one dollar per annum.

The first number contains a brief notice of the New York State Lunatic Asylum, a paper on Insanity, illustrated by histories of distinguished men and by the writings of poets and novelists, and several other well-written articles.

—

Pennsylvania Hospital.—We learn from the annual report of this admirable Institution, that the whole number of patients during the year ending the 22d of April was 1011. The average number of patients maintained in the hospital during the past year has been 101, of whom 23 were pay, and 78 poor patients.

Of the poor patients admitted in this year, 298 were persons who had sustained accidental injury requiring surgical aid. Of this description were also 16 of the cases remaining in the hospital at the close of the preceding year.

Of the 938 patients admitted into the hospital during the past year, there were

	Males.	*Females.*	*Total.*
Infants born in the hospital,	19	9	28
Under 18 years of age,	78	30	108
Unmarried adults,	376	74	450
Married,	193	82	275
Widowers and Widows,	37	40	77
	703	235	938

The number admitted into the Insane department was 279.

UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.—SESSION of 1844–5.—The Lectures will commence on Monday, the 4th day of November, and be continued, under the following arrangement, to the middle of March ensuing.

Practice and Theory of Medicine,	Nathaniel Chapman, M. D.
Chemistry,	Robert Hare, M. D.
Surgery,	William Gibson, M. D.
Anatomy,	William E Horner, M. D.
Institutes of Medicine,	Samuel Jackson, M. D.
Materia Medica and Pharmacy,	George B. Wood, M. D.
Obstetrics and the Diseases of Women and Children,	Hugh L. Hodge, M. D.

A Course of Clinical Lectures and Demonstrations, in connection with the above, is given at the very extensive and convenient Infirmary called the Philadelphia Hospital.

Clinical Medicine, by W. W. Gerhard, M. D.; Clinical Surgery, Drs. Gibson and Horner.

Clinical Instruction in Medicine is also given from the 1st day of November to the 1st day of March by Dr. Wood, in the Pennsylvania Hospital, an institution which is well known as one of the finest and best conducted Infirmaries in the United States.

Clinical Instruction is likewise given at the University, every Saturday morning.

The rooms for Practical Anatomy will be opened October 1st, and continued so to the end of March ensuing. They are under the charge of Paul Beck Goddard, M. D., Demonstrator, with a supervision on the part of Dr. Horner.

W. E. HORNER, M. D.,

August 1st, 1844. *Dean of the Medical Faculty, 263 Chesnut Street, Philadelphia.*

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JEFFERSON MEDICAL COLLEGE, SESSION OF 1844-45.

The regular Course of Lectures will commence on Monday the 4th of November, and end on the last day of February.

ROBLEY DUNGLISON, M. D., Professor of Institutes of Medicine, &c.
ROBERT M. HUSTON, M. D., Professor of Materia Medica and General Therapeutics.
JOSEPH PANCOAST, M. D., Professor of General, Descriptive, and Surgical Anatomy.
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The Dissecting Room will open on the first of October, under the Professor of Anatomy, and Clinical Instruction in Medicine and Surgery will be given at the Dispensary of the College.

R. M. HUSTON, M. D., Dean of the Faculty.
No. 1 Girard St.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

The regular course of Lectures in this Institution will be resumed on the second Monday in November.

Anatomy, - - - - - - - -	by J. E. HOLBROOK, M. D.
Surgery, - - - - - - - -	" E. GEDDINGS, M. D.
Institutes and Practice of Medicine, - -	" S. HENRY DICKSON, M. D.
Physiology, - - - - - - -	" JAMES MOULTRIE, M. D.
Materia Medica, - - - - - - -	" HENRY R. FROST, M. D.
Obstetrics, - - - - - - - -	" THOMAS G. PRIOLEAU, M. D.
Chemistry, - - - - - - - -	" C. U. SHEPARD, M. D.

The school for Practical Anatomy has been reorganized, and will be under the charge of Prof, Holbrook, assisted by Drs. Desaussure, Chazal, Sinkler, Gaillard, and Ravenel.

Clinical Instruction at College Hospital, Marine Hospital and Almshouse.

HENRY R. FROST, *Dean.*

MEDICAL COLLEGE OF GEORGIA.

The annual course of Lectures in this Institution will commence on Monday, the 11th of November next.

Anatomy, - - - - - - - - -	GEO. M. NEWTON, M. D.
Surgery, - - - - - - - - -	PAUL F. EVE, M. D.
Institutes and Practice of Medicine, - - -	LEWIS D. FORD, M. D.
Materia Medica and Therapeutics, - - -	J. P. GARVIN, M. D.
Obstetrics, and Diseases of Women and Infants, -	J. A. EVE, M. D.
Physiology and Pathological Anatomy, - -	L. A. DUGAS, M. D.
Chemistry and Pharmacy, - - - - -	ALEX. MEANS, M. D.
Demonstrator of Anatomy, - - - - -	H. F. CAMPBELL, M. D.

Clinical Lectures will be delivered at the City Hospital, which has been placed under the control of the Faculty.

GEORGE M. NEWTON, M. D., *Dean.*

AUGUSTA, Sept. 1844.

MEDICAL DEPARTMENT OF THE COLUMBIAN COLLEGE.

The annual course of Lectures in this Institution will commence on the first Monday in November, and continue until the first of March.

During this period full courses will be delivered on the various branches of medicine by

THOMAS SEWALL, M. D., *Professor of Pathology and the Practice of Medicine.*
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found in the luxurious habits of later times, which have carried to a dangerous excess the comforts of our dress and habitations. In nothing is there a greater contrast between us and our ancestors than in the luxurious closeness and warmth of our apartments; and it will scarcely be denied that the result of such a mode of living has been to render us more easily affected by the rigour and changeableness of the climate out of doors, which, unhappily, appears rather to have retrograded than improved, while the endless invention of new modes of defence in our domestic arrangements, has made the contrast still greater. No author has dwelt so much on the consequences of these luxurious habits in predisposing to asthma, as Withers, whose observations are most pertinent, and well merit the attention of the reader. (See his Treatise on Asthma.) It is frequently by inducing this sensibility to the impression of cold, and by thus predisposing to catarrh, that dyspepsia lays the foundation of asthma. Many other of the remote causes of asthma operate in the same manner, and among these, certain mental states, particularly the depressing passions. Sedentariness and seclusion, the natural consequences of grief and melancholy, give rise to dyspepsia, and dyspepsia induces the languid circulation in the skin, extremities, and mucous membranes, which seems to be the immediate cause of the increased sensibility to cold.

II. **Exciting causes.**—Under this head must be comprehended all such circumstances as have been known immediately to induce a paroxysm, whether in the predisposed or not. These are extremely numerous and various. Joseph Frank alone enumerates upwards of forty, and it is but justice to this learned and indefatigable writer to state that he gives his authority in every case. (Prax. Med. Univ. Pars ii. vol. vii. p. 386.) Our countryman Willis, in general and more pithy terms, conveys nearly the same information when he informs us that "asthmatics can bear nothing violent or unusual. From excess of heat or cold, from any great bodily exertion or mental emotion, from change of season or of weather, from errors, even of a slight kind, in the non-naturals, and from a thousand things besides, they fall into fits of dyspnœa."* By far the most common and most important of these cases, we consider to be the application of cold, or, at least, one or more of those circumstances, whatever they may be, which, in ordinary cases, produce catarrh. Although it will appear from what is gone before that we do not deny the existence of cases of asthma of a purely nervous kind, and altogether independent of any permanent local affection of the bronchial membrane, we are decidedly of opinion that they constitute an extremely small proportion of the cases met with in practice. And we are further of opinion that out of the immense majority of cases of asthma from other causes, nine-tenths are complicated with some form of catarrh, or, at least, with a morbid susceptibility of the bronchial membrane to be affected by cold. In this very numerous class of cases, then, all those circumstances which induce catarrh, and which may generally be considered as some form or modification of cold, applied to the whole body or to a part of it, must be understood to be the usual exciting causes of the asthmatic paroxysm.

[Yet in regard to the exciting causes, there are some which induce asthma, and can scarcely be considered amongst the causes of catarrh. In general, a cold and dry air suits the asthmatic, but there are singular differences in this respect. Closing a door has been known to bring on a paroxysm; and, with some, darkness increases the violence of the attacks. One cannot bear smoke; another exists better in a smoky apartment. (Dunglison's *Practice of Medicine*, 2d edit. i. 327: Philad. 1844.)]

All practical writers on asthma lay great stress on this exciting cause, but none with such precision and effect as Withers, Ryan, and Watt. The latter author in particular, in a short but most valuable essay published in his Treatise on Diabetes, has very strikingly and beautifully illustrated the subject. In several cases there recorded, he has pointed out, with the greatest minuteness and perspicuity, the gradual influence of the cause, from the first impression of the cold up to the invasion of the paroxysm. (Cases of Diabetes, &c. p. 254. Glasgow, 1808.) Ryan had previously made the same observation, and applied it to practical purposes of the greatest importance. (Observations on Asthma, p. 40. London, 1793.) In these opinions our own experience leads us fully to concur; almost every case of asthma which we have met with being traceable to the usual causes of catarrh, and most of them being advantageously treated only on the principles which regulate the practice in that disease.

Treatment of Asthma.—In this, as in other diseases, the attainment of a just pathology would wonderfully abbreviate the labour of therapeutical prescription. In the writings of the older authors, who were, in general, guided either by empirical views or by fanciful theories of disease, we find no end to the array of medical formulæ, until every thing that had been put on record by their predecessors, or had been imagined by themselves or their contemporaries, as useful or likely to be useful in the individual disease under consideration, has been displayed at full length. In our own days, and in the diseases of the nature of which we have acquired some accurate views, a few general precepts will convey to those acquainted with the general principles of therapeutics all that we have to deliver respecting the treatment of a disease. We have not yet attained, in the case of asthma, to a pathology perfect in all its parts; yet we trust that enough has been recorded in the preceding pages to permit us to be more brief in the delivery of our practical precepts than some of our predecessors.

In entering upon this part of our subject, it is desirable that the reader keep constantly in mind that almost every thing in the succeeding pages respecting the treatment of asthma applies exclusively to the chronic forms of that disease. It will be recollected that the disease termed acute asthma is either a variety of bronchitis, or a violent

* Asthmatici nihil violentum aunt inassuetum ferre possunt: á frigoris vel caloris excessu, a vehementi quovis corporis aunt animi motu, ab aeris aunt anni mutationibus quibusque magnis, ab erratis vel levioribus circa res non naturales, imo propter mille alias occasiones in dyspnœæ paroxysmos incidunt. — *De Medicam. Oper. p.* 209.

effects of astringents by acting chemically on the contents of the stomach and intestines, very few remarks will suffice. Both lime and its carbonate, or chalk, operate in checking diarrhœa by neutralizing the ascescent matters which augment the irritability of the intestines, and keep up their morbidly increased peristaltic movement. Owing to the little solubility of pure lime, chalk, rubbed up with mucilage of gum so as to suspend it in any fluid, is preferred in cases of diarrhœa. It is incompatible with vegetable infusion containing much tannin, and with preparations of ipecacuanha. When it is necessary to continue the use of the chalk mixture for some time, the bowels should be cleared with a purgative, as accumulations in the form of hard balls are apt to take place in them, and, lodging in the folds of the intestines, to cause much inconvenience and, occasionally, hazard.

[The agents, considered thus far, may be regarded as direct astringents; but profuse evacuations may be connected with different states of the living system, so that agents, possessed of no astringent properties, may check them or produce an astringent operation indirectly. Hence, there may be *direct* and *indirect* astringents, as there are direct and indirect tonics. Opium, for example, by allaying the augmented peristole in diarrhœa, may exert an action of astringency, and diminish the number of discharges: accordingly, it is often had recourse to in such cases. Again, the increased discharges of dysentery are induced by an inflammatory condition of the mucous coat of the intestines: bleeding, therefore, by allaying this inflammation, and castor-oil,—given occasionally, so as to remove gently the morbid secretions,—by taking away the cause, may check the effects. A predominance of acidity in early infancy lays the foundation for many of the bowel complaints, which are so common at that age, and keeps them up when once established. A proper antacid, as before observed, by neutralizing the acid, takes away the cause, and thus becomes an indirect astringent. (The writer's *General Therapeutics and Mat. Med.* ii. 96, Philad. 1843.)]

In a therapeutical and practical point of view, astringents, when administered on proper principles, are a valuable class of remedies. In intermittent fevers, the vegetable astringents have been successfully employed in the same manner as simple tonics. We can form no other idea of the manner in which they prove beneficial than by supposing, that they obviate the relaxation which favours the influence of the exciting causes of agues. On this account it has been asserted that tonics and astringents operate in every respect in a similar manner; but many tonics, such, for instance, as sulphate of quinia, possess no astringency, and nevertheless are useful in intermittents; and it must be admitted that, as pure astringents are seldom or never given alone in intermittents, it is difficult to ascertain how much of the benefit is due to their influence. They are employed in continued fevers only to moderate incidental diarrhœa and internal hemorrhages.

In the phlegmasiæ, astringents are contra-indicated as general remedies; but in that state of inflammatory action which assumes a chronic character, and is kept up by debility and increased nervous excitability, such as occurs in the eye and in the tonsils, they are local remedies of considerable value. Solutions of the metallic salts, and infusions of astringent vegetables, with the addition of diluted sulphuric acid, are well adapted for these cases. Indeed, after inflammatory action has been subdued by the use of the lancet and other antiphlogistic measures, the application of cold and astringent solutions tends greatly to restore the healthy action of the part.

[In diphtheritic affections of the throat, a solution of nitrate of silver has been found of great benefit; and in cases of diphtheritic laryngitis, the inhalation of finely powdered alum has been markedly advantageous. Not only—according to Laënnec—has it afforded great and speedy relief in tracheitis, but in laryngitis isthmitis, and pharyngitis.]

No remedies are so important in the hemorrhagiæ as astringents; but they are not to be indiscriminately prescribed, or at all times employed: it is, therefore, necessary, to inquire what are the circumstances indicating their use in these cases? Hemorrhages are properly divided into active and passive. In the first or active kind, the flow of blood generally arises from a plethoric condition of the vascular system; and it may, in some respects, be regarded as an effort of nature to relieve the morbid fulness of the vessels. In this form of hemorrhage, tonic astringents are improper; and even those exerting a sedative influence should not be resorted to until the vessels be either emptied spontaneously or by the use of the lancet. In passive hemorrhages the animal fibre is relaxed, the red particles of the blood are diminished, and diffused in a superabundance of serum, so that the blood assumes a pale watery aspect; while the system suffers from general debility. In this state, astringents are decidedly indicated, and may be liberally employed. Although these opposite states appear very obvious in description, yet much judgment and attentive observation are requisite to distinguish them on many occasions. If we take, for example, epistaxis, let us enquire, what are the peculiar symptoms which clearly indicate the employment of astringents? When bleeding takes place from the nostrils of young persons of a plethoric habit, it may be critical, or connected with congestions, or a determination of blood to the head. In this state the hemorrhage should not be checked by astringents, unless it is so profuse and long continued as greatly to lower the pulse, to produce pallor of the countenance, and exhaust the general strength. On the contrary, when epistaxis happens in weak boys or youths, or in old persons; or when it is symptomatic of diseased liver, or some other internal organ; then astringents may be at once administered to check the direct loss of blood, whilst other means are resorted to for removing the exciting causes of the hemorrhage. The best astringents in these cases are solutions of metallic salts and of alum: they may be either injected into the nostrils, or dossils of lint soaked in an astringent solution may be inserted; while at the same time cold water is applied to the face and nape of the neck.

In hæmoptysis, if the excitement be considerable, the lancet must be employed, after which the application of cool air, cold water, or ice to the

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